

VIRGINIA AQUATIC RESOURCES TRUST FUND ANNUAL REPORT - 2008

March 31, 2009

This document serves as the required annual reporting of the status and activities of the Virginia Aquatic Resources Trust Fund (Fund) through December 31, 2008. The report includes a summary of the permitted impacts and associated mitigation payments and the projects to mitigate those impacts since the initiation of the Fund. This report updates the 2007 Annual Report and details specific activity conducted by the program in 2008.

The information is divided into the following sections:

- **Executive Summary** – provides a general overview of the information in the report
- **I. Introduction** – provides general information and background about the program and a summary of the status of impacts, mitigation payments, and funds authorized since the initiation of the Fund
- **II. Impacts, Revenues, and Operational Costs** – provides the distribution of impacts and mitigation payments by river basin and resource type and a summary of other revenues and operational costs
- **III. Summary of 2008 Impact and Mitigation Payments, Project Proposals, and Funding Authorizations** – provides a summary of the impact and mitigation payments, proposed projects, and funds authorized during 2008
- **IV. Mitigation Overview** – provides information concerning mitigation goals and general procedures
- **V. Mitigation Projects** – provides details of the mitigation projects for which funds have been proposed and authorized in 2008, and updates information on projects funded prior to 2008.
- **VI. Future Priorities** – identifies future goals and needs of the Fund
- **Attachment A.** Approved Project Table
- **Attachment B.** Map of Project Locations within River Basins
- **Attachment C.** Approved Project Summaries within River Basins
- **Attachment D.** Map of Northwest River Conservation Corridor
- **Attachment E.** Map of Dragon Run Conservation Corridor

Executive Summary

The Virginia Aquatic Resources Trust Fund (Fund) is administered in partnership by The Nature Conservancy of Virginia (the Conservancy) and the Norfolk District United States Army Corps of Engineers (Corps) to provide compensatory mitigation for permitted wetland and stream impacts in Virginia through an in-lieu-fee (ILF) agreement. The Fund provides one option for a permit applicant to address compensatory mitigation requirements associated with Section 404 and 401/Virginia Water Protection permits issued by the Corps and the Virginia Department of Environmental Quality (DEQ), respectively. By consolidating the mitigation requirements of multiple small projects, the Fund is able to implement large-scale watershed efforts that restore, enhance, and protect water quality. The Fund attempts to maximize the ecological benefits of compensatory mitigation by locating mitigation projects in identified conservation priority areas within each watershed. For instance, many of the Fund's mitigation projects have been integrated into areas identified by the Conservancy's overall Conservation by Design strategy as important to protect the rare plants, animals, and natural communities of Virginia.

A primary goal of the Fund is to ensure a "no net loss" of acreage, functions, and values for compensatory mitigation completed for impacts to aquatic resources of the same type and within the same watershed as the impacts. This watershed approach is implemented through the completion of projects located in the same major river basin as the impacts. The fourteen major river basins used for this approach are the Atlantic Ocean, Big Sandy, Chesapeake Bay, Chowan River, Lower James River, Middle James River, Upper James River, New River, Potomac River, Rappahannock River, Roanoke River, Shenandoah River, Tennessee River, and York River. Each basin is composed of the 8-digit hydrologic unit codes (HUC) with the exception that the Chesapeake Bay HUC's and Atlantic Ocean HUC are separated for the purposes of the Fund reporting.

The following summary is intended to provide general information about the Fund. The areas of focus include impacts and finances, non-tidal wetland summary, tidal wetland summary, and stream summary. Much of the information is provided in a tabular format for ease in review. The information is provided on a program-wide level and by major river basin for each resource type. Although condensing the Fund's activities into programmatic categories may be informative, it is important to note that the Fund seeks to provide the appropriate compensatory mitigation for each aquatic resource within each river basin. In order to get the full understanding regarding impacts, mitigation funds, authorized funds, and compensatory mitigation for each basin, please refer to the detailed information contained in the rest of this report.

Through December 31, 2008, the Fund has been used to mitigate for non-tidal wetland, tidal wetland, and stream impacts in the fourteen major river basins in Virginia. These impacts have generated \$52,784,379 in mitigation payments as summarized in Table 1. From these mitigation payments, the Corps has authorized \$35,948,581 for the Conservancy to complete activities on 101 potential mitigation projects. The Conservancy is actively pursuing mitigation activities on 92 of these sites in twelve of the major river basins. In addition to the mitigation payments and authorized funds to complete mitigation projects, as of December 31, 2008, the Fund has generated \$4,371,652 in interest, and has incurred total authorized costs of \$2,813,298 to fund staff positions, general equipment, and overhead and bank fee charges.

Table 1: Summary of Impacts, Mitigation Payments, and Funds Authorized from 1995-2008

Resource Type	Impacts	Mitigation Payments (\$)	Authorized Funds (\$)
Non-tidal Wetland	238.74 acres	20,151,802	13,455,082
Tidal Wetland	2.612 acres	628,552	534,690
Stream (pre-USM)	163,428 linear feet	24,970,392	21,221,171
Stream (USM)	17,157 linear feet	7,033,634	737,638
Totals		52,784,380	35,948,581

The following table summarizes the achievements of the Fund through 2008, indicating the amount of impacts by resource type and the total acres of wetlands and linear feet of streams restored and protected.

Table 2: Program-wide Leverage

Resource Type	Impacts	Restored	Protected
Non-tidal Wetland	238.74 acres	608.79 acres	3,769.80 acres
Tidal Wetland	2.612 acres	23.4 acres	308.73 acres
Stream	180,585 linear feet	52,294 linear feet	657,040 linear feet
Upland/Riparian Buffer	N/A	235.55 acres	5,062.6 acres
Additional Protected	N/A	N/A	9,264.25 acres
Total	241.35 acres	632 acres	18,405.38 acres
	180,585 lf	52,294 lf	675,040 lf

Table 3 details the number of payments made to the Fund each year for each resource type since its inception in 1995.

Table 3: Summary of Payments into the Fund

Year	Non-tidal Wetland	Tidal Wetland	Stream	Total Payments
1995	2	0	0	2
1996	13	3	0	16
1997	16	6	0	22
1998	21	4	0	25
1999	22	13	0	35
2000	31	4	0	35
2001	54	4	6	64
2002	88	8	3	99
2003	88	5	3	96
2004	57	5	57	119
2005	48	2	88	138
2006	43	6	87	136
2007	31	0	42	73
2008	20	1	28	49
Total	534	61	314	909

In 2008, the Conservancy requested funding to complete various mitigation activities, including full restoration expenses, land acquisition, appraisals, feasibility studies, and surveys associated with 22 new projects and 13 already approved projects. These projects included mitigation opportunities for non-tidal and tidal wetlands and streams across ten of the thirteen major river basins. The Corps with input from advisory agencies, reviewed the proposal, projected budget, and approved 33 of these proposals.

The 101 projects approved since program inception are in various stages of completion. Table 4 summarizes the progress of all projects to date. For example, a significant number of projects were approved during 2006 through 2008. Many of these projects are pending the closure of land deals or easements, require delineations or surface water assessments, or are in the initial planning stages for restoration or enhancement activities. In addition to the recently approved projects, many of the older projects are pending official closure by the Conservancy with approval by the Corps. Therefore, acreages, linear footages, and funding values included in this report are often estimates and may require clarification in future reports.

Table 4: Status of Approved Projects

Project status	Non-tidal Wetland	Tidal Wetland	Stream	Multiple Resource	Total Number
Active project development	4	0	13	6	23
Acquired/Protected	10	1	5	8	24
Construction Planned 2008	2	0	1	1	4
Constructed/Monitoring	13	3	2	3	21
Closed/Mitigation	6	3	6	2	17
Closed without mitigation	3	1	2	3	9
Inactive, pending closure	2	0	1	0	3
Total	40	8	30	23	101
Active project development – currently in negotiations with landowner and/or developing restoration plans. Acquired/Protected – preservation only projects with land protection deal completed; delineation required to close. Construction 2008 – restoration plans complete or underway for 2008 implementation of mitigation activities. Constructed/Monitoring – restoration activities are complete, project in monitoring phase (up to 10 years) Closed/Mitigation – project has been officially closed and mitigation credit assigned. Closed w/o Mitigation – project has been officially closed and did not provide any mitigation credit (appraisal, feasibility, project withdrawn). Inactive – project is no longer moving forward and will be closed w/o credit					

Expenditures from the Fund follow the progress of each mitigation project. Some of these projects are completed quickly, for example preservation projects. However, many of these projects involve restoration and monitoring and occur over a number of years. The majority of restoration projects funded are proposed to have monitoring for up to ten years following completion of restoration activities and the planning period may take several years. Table 5 provides information about the expenditures from the Fund to complete the mitigation activities approved by the Corps on an annual basis.

Table 5: Summary of Yearly Expenditures

Year	Expenditures \$
1995	16
1996	37,442
1997	173,692
1998	320,596
1999	40,180
2000	824,016
2001	681,947
2002	1,184,821
2003	551,379
2004	1,239,881
2005	1,110,749
2006	2,615,709
2007	5,991,699
2008	5,939,935
Total	20,712,062

Of the 101 approved projects, 65 projects include mitigation activities to address non-tidal wetland impacts; 13 projects include mitigation activities to address tidal wetland impacts; and 50 projects include mitigation activities to address stream impacts. Twenty-six of the approved projects include mitigation activities to address impacts to multiple aquatic resource types. Of the 101 approved mitigation projects, the Conservancy is actively developing or completing 92 projects. The Conservancy is no longer pursuing the remaining projects due to irresolvable landowner constraints or based on the recommendations of feasibility studies. The mitigation sites are most often permanently protected through recordation of a conservation easement or ownership by the Conservancy. Alternative protection methods may be implemented with approval by the Corps.

Table 6 summarizes the funds authorized by the Corps according to resource type and major river basin. All major river basins in Virginia have had funds authorized towards mitigation projects, except for the Big Sandy River and New River basins. Until recently, the Fund has not been used as a mitigation option in those basins.

Table 6: Authorized Funds Per Resource Type and Basin through 2008

Basin	Funds Authorized			
	Non-Tidal Wetland Projects (\$)	Tidal Wetland Projects (\$)	Stream Projects (\$)	Total (\$)
Atlantic Ocean	0	256,350	0	256,350
Chesapeake Bay	1,534,319	88,024	136,176	1,758,518
Chowan	2,617,725	52,666	77,150	2,747,541
Lower James	3,401,116	88,650	1,584,282	5,074,048
Middle James	493,200	0	4,587,105	5,080,305
Upper James	127,999	0	149,009	277,008
Potomac	1,235,820	38,000	8,012,255	9,286,074
Rappahannock	1,745,936	10,000	2,576,651	4,332,587
Roanoke	251,575	0	728,825	980,400
Shenandoah	535,836	0	3,387,284	3,923,120
Tennessee	85,000	0	358,090	443,090
York	1,426,557	1,000	361,982	1,789,539
Totals	13,455,081	534,691	21,958,809	35,948,581

Non-Tidal Wetland Summary

The following tables 7, 8 & 9 provide summary information of Fund activity relating to non-tidal

wetlands from 1995 through 2008. Table 7 details the total impacts (acres), mitigation payments, authorized funds, remaining balance of available funds, and the mitigation liability (credits) for non-tidal wetlands. Table 8 details the mitigation activities being pursued (acres), and the associated proposed credits for non-tidal wetlands. Table 9 provides a summary of the non-tidal wetland impacts (acres), the associated credit liability, the proposed wetland mitigation credits, mitigation acres, and additional protected acres for each major river basin.

Table 7: Non-Tidal Wetland Impact and Financial Summary

Impacts (Acres)	Mitigation Payments (\$)	Authorized Funds (\$)	Remaining Balance (\$)	Mitigation Liability (Credits)
238.74	20,151,802	13,455,082	6,696,720	429.14

Table 8: Non-Tidal Wetland Mitigation Activity Summary

Non-Tidal Wetland Mitigation Activities (Acres)					Sum of Mitigation Acres	Sum of Mitigation Credits
Wetland Restoration	Wetland Enhancement	Wetlands Preservation	Upland Restoration	Upland Preservation		
608.79	34.25	3,769.80	235.55	1,263.94	5,848.11	1,060.79

Table 9: Non-Tidal Wetland Mitigation Activity Summary Based on Major River Basin

Basin	Impacts (Acres)	Mitigation Liability (Credits)	Proposed Mitigation (Credits)	Credit Balance (Credits)	Proposed Mitigation (Acres)	Additional Protected Acreage
Atlantic Ocean	0.62	1.21	0.00	-1.21	0.00	0.00
Big Sandy	0.11	0.15	0.00	-0.15	0.00	0.00
Chesapeake Bay	44.46	84.09	130.46	46.37	1,062.82	301.64
Chowan River	41.54	76.13	381.06	304.93	1,776.72	149.3
Lower James River	70.32	132.69	253.89	121.2	1,174.28	739
Middle James River	20.05	37.00	25.96	-11.04	94.50	513.32
Upper James River	3.10	5.08	4.21	-0.87	13.99	0.00
New River	1.02	1.06	0.00	-1.06	0.00	0.00
Potomac River	7.86	12.39	72.92	60.53	812.26	0.00
Rappahannock River	10.21	18.98	66.72	47.74	197.76	443.6
Roanoke River	4.02	6.97	5.88	-1.09	33	0.00
Shenandoah River	8.07	9.51	11.7	2.19	29	0.00
Tennessee River	18.29	26.65	4.83	-21.82	29.22	0.00
York River	9.07	17.24	96.57	79.33	427.36	58.32
Total	238.74	429.15	1,054.2	625.05	5,650.91	2,205.18

Though impacts have occurred in all fourteen major river basins (Table 10), historically, the majority of non-tidal wetland impacts (greater than 20 acres) and mitigation payments have accumulated in the following basins: Chesapeake Bay, Chowan River, Lower James River, and Middle James River. Moderate impacts and mitigation payments have accumulated in the Potomac River, Rappahannock River, York River, Shenandoah River, and Tennessee River

Basins. Relatively few impacts (less than 5 acres) and associated payments have been received in the Atlantic Ocean, Big Sandy River, Upper James River, New River, and Roanoke River Basins. Approximately three quarters of all impacts were to palustrine forested wetlands, with the remaining quarter split among emergent and shrub-scrub wetland types.

Table 10: Summary of Constructed Non-Tidal Restoration Sites through 2008

Site ID	Name	Basin	Restoration Constructed (Acres)	Upland Buffer (Acres)	Enhancement (Acres)	Proposed Credits
CB-1	Dameron Marsh (Smith 1)	CB	15.88	21.33	0.00	17.30
CB-10	East River (Brooks/Ober)	CB	12.50	4.20	0.00	12.78
CH-3	Dismal Swamp (Bruff)	CH	3.07	6.93	0.00	3.53
CH-5	Northwest River (Benefits)	CH	11.96	0.00	15.02	16.97
CH-6	Northwest River (Hall)	CH	25.00	2.00	0.00	25.13
CH-7	Nawney Creek (Knight)	CH	8.00	10.00	0.00	8.67
CH-8	Northwest River (Su)	CH	49.00	4.00	0.00	49.27
CH-9 /LJ-4	Northwest River (Stephens)	CH	61.00	10.00	0.00	61.67
CH-10	Northwest River (Powers)	CH	25.25	0.50	0.00	25.28
CH-11	Nawney Creek (Fentress)	CH	19.00	3.79	0.00	19.25
LJ-1	Chickahominy River (Walters)	LJ	20.00	23.00	0.00	21.53
LJ-4 /CH-9	Northwest River (Stephens)	LJ	61.00	10.00	0.00	61.67
MJ-1	Rivanna River (Lamb)	MJ	20.00	26.00	0.00	21.73
PO-1	Caledon (Nash)	PO	10.00	26.38	0.00	11.76
RP-12	Rappahannock River (Norman's Ford – Craig)	RP	2.92	0.00	0.00	2.92
TN-3	Barns Chapel (Atwell)	TN	0.00	0.00	4.01	1.34
UJ-1	Warm Springs Mountain / Cowpasture River (Phillips)	UJ	3.09	3.91	1.78	3.94
YK-2	Mattaponi River (Gwathmey)	YK	67.50	33.00	2.50	70.53
YK-5	Cumberland Marsh (Healthvest, Inc.)	YK	1.90	0.00	0.00	1.90
YK-7	Mattaponi River (Gwathmey 3)	YK	1.74	2.01	0.00	1.87
	Total		418.81	187.05	23.31	439.04

Table 11 summarizes the non-tidal restoration projects that are currently in the planning/acquisition phase of the project. Several of these are in design, under contract and expected to be constructed in 2009. Non-tidal wetland mitigation requirements are largely

addressed by mitigation projects in key basins with the greatest impacts such as the Lower James River, Chowan River and York River, as summarized in table 11. Additionally, projects in planning and design stages address the liability in basins such as Chesapeake Bay, Rappahannock River, Shenandoah River and Roanoke River basins. However, mitigation projects are still needed in the Tennessee River basin.

Table 11: Summary of Proposed Non-Tidal Restoration Sites through 2008

Site ID	Name	Basin	Restoration Planned (Acres)	Upland Buffer (Acres)	Enhancement (Acres)	Proposed Credits
CB-17	Dameron Marsh/Hughlett Point/Fleet Bay (Thompson, W.)	CB	14.0	0	0	14.0
CH-13	Northwest River (SP Forests, LLC)	CH	27.50	0	0	27.5
LJ-7	Great Dismal Swamp NW Section (Jacobson)	LJ	30.00	24.0	2.5	32.43
LJ-10	James River site	LJ	50.0	0	0	50.0
PO-5	Goose Creek (Bluewildlife)	PO	5.00	0	1.5	5.5
RP-11	Mountain Run (EBX)	RP	17.25	5.5	0.82	18.4
RP-13	Rappahannock River site	RP	32.23	19	0	33.5
RO-3	Goose Creek – Roanoke site	RO	4	7	0	4.47
SH-4	Shenandoah Mtn/Cow Knob site	SH	10	6	0	10.4
TN-6	Rich Mountain site	TN	0	0	7.9	2.61
Total			189.98	61.5	12.72	198.81

In total, at the end of 2008, the Fund has constructed over 418 acres of wetlands and has proposed to construct another 190 acres in 2009. In addition, over 23 acres of wetlands have been enhanced through Fund activity and 187 acres of upland buffer have been restored.

Tidal Wetland Summary

Tables 12, 13 and 14 provide summary information of Fund activity relating to tidal wetlands from 1995 through 2008. Table 12 provides the total impacts (acres), mitigation payments, authorized funds, the remaining balance of available funds, and the mitigation liability (credits) for tidal impacts. Table 13 summarizes the mitigation activities being pursued (acres), and the associated proposed credits for tidal wetlands on a program-wide basis. Table 14 provides a summary of the tidal wetland impacts (acres), and the associated credit liability, the proposed wetland mitigation credits, mitigation acres, and additional protected acres for each major river basin.

Table 12: Tidal Wetland Impact and Financial Summary

Impacts (Acres)	Mitigation Payments (\$)	Authorized Funds (\$)	Remaining Balance (\$)	Mitigation Liability (Credits)
2.612	\$628,552	\$534,691	\$93,861	2.612

Table 13: Tidal Wetland Mitigation Activity Summary

Tidal Wetland Mitigation Activities (Acres)					Sum of Mitigation Acres	Sum of Mitigation Credits
Wetland Restoration	SAV Restoration	Oyster Restoration	Tidal Enhancement	Tidal Preservation		
23.4	20.0	3.35	220.00	308.7	617.4	64.37

Table 14: Tidal Mitigation Activity Summary Based on Major River Basin

Basin	Impacts (Acres)	Mitigation Liability (Credits)	Proposed Mitigation (Credits)	Credit Balance (Credits)	Proposed Mitigation (Acres)
Atlantic Ocean	1.01	1.01	4.6	3.05	23.01
Chesapeake Bay	1.06	1.06	23.59	22.53	303.69
Chowan River	0.01	0.01	1.40	1.39	70.00
Lower James River	0.43	0.43	20.07	19.64	20.34
Potomac River	0.11	0.11	9.71	9.6	117
Rappahannock River	0.00	0.00	1.60	1.60	80.00
York River	0.00	0.00	3.40	3.40	3.40
Total	2.62	2.62	64.37	61.21	617.44

Through the end of 2008, tidal impacts have been paid into the Fund from all tidally influenced basins except the Rappahannock River Basin (Table 14). Tidal impacts are in general very small and infrequently accrued into the Fund. Most tidal impacts paid into the Fund have occurred in the Atlantic Ocean Basin (1 acre), accounting for half of all tidal impacts amassed by the Fund. The majority of tidal wetland impacts occurred to estuarine emergent (e.g. salt-marsh) wetlands although open water/unconsolidated bottom impacts account for roughly a quarter of the impacted acres.

A number of projects with tidal mitigation components have been approved through the Fund, including four that involve innovative restoration efforts (SAV restoration and oyster reef restoration). However, tidal marsh restoration or creation is lacking in the two basins of highest impacts (Chesapeake Bay and Atlantic Ocean). Although the restoration efforts funded to date are not inferior, they do result in mitigation that is “out-of-kind” and these projects are subjected to higher ratios. Therefore, tidal salt marsh restoration and/or creation will remain a priority for those two basins.

Stream Summary

Tables 15, 16 and 17 provide summary information of the Fund activities for streams from 1995 through 2008. Table 15 provides a summary of the total linear feet of impacts and associated funding information for streams on a program-wide basis. Table 16 details the total linear footage of each mitigation activity the Fund is pursuing through the stream projects on a program-wide basis. For a broad overview of Fund activity, stream mitigation activities are

divided into the following four general categories: channel restoration / enhancement (projects may include riparian buffer planting); riparian buffer planting (projects do not have channel or bank work); livestock exclusion; and stream and/or riparian buffer preservation. Table 17 summarizes the total impact length, linear footage of each mitigation activity, total channel length in the mitigation area, stream mitigation acreage, and the additional protected acreage for the approved stream projects for each major river basin.

As noted in tables 16 and 17, multiple mitigation activities are completed along the same channel length for several projects. For example, riparian buffer planting and livestock exclusion activities are conducted along the same 2,000 linear foot length of stream channel for a project in the Rappahannock River Basin. Table 17 identifies these areas of multiple mitigation activities. Detailed descriptions of the mitigation activities (with associated buffer widths, as appropriate) for each project are included in the report.

Table 15: Stream Impact and Financial Summary.

	Impacts (linear feet)	Mitigation Payments (\$)	Authorized Funds (\$)	Remaining Balance (\$)
Pre-USM	163,428	24,970,392	21,221,171	3,749,221
USM	17,157	7,033,634	737,638	6,295,996
Total	180,585	32,004,026	21,958,809	10,045,217

Table 16: Stream Mitigation Activity Summary.

Stream Mitigation Activity (linear feet)					
	Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation	Total Channel Length in Mitigation Area (linear feet)
Pre-USM	51,309	14,100	23,799	541,826	611,077
USM	985	0	0	44,978	45,963
Total	52,294	14,100	23,799	586,804	657,040
For several projects, multiple mitigation activities are completed along the same channel length (e.g., Riparian Buffer Planting and Livestock Exclusion).					

Table 17: Stream Mitigation Activity Summary Based on Major River Basin.

Basin	Impacts (lf)	Stream Mitigation Activity (linear feet)				Total Channel Length in Mitigation Area (lf)	Stream Mitigation Area (Acres)	Additional Protected Acreage
		Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation			
Atlantic Ocean	0	0	0	0	0	0	0.00	0.00
Big Sandy	3,006	0	0	0	0	0	0.00	0.00
Chesapeake Bay	1,399	0	0	0	11,168	11,168	40.51	NTW
Chowan River	1,625	0	0	0	0	4,900	16.1	NTW
Lower James River	22,948	9,071	0	0	9,670	18,741	118.74	NTW
Middle James River	29,312	14,191	6,000	0	49,020	66,711	665.96	229.9
Upper James River	0	0	0	0	7,445	7,445	104.4	0.00
New River	3,078	0	0	0	0	0	0.00	0.00
Potomac River ¹	76,495	17,527	0	8,477	109,141	128,068	593.04	1,670
Rappahannock River ^{2,3}	15,679	0	2,000	7,742	308,197	315,939	1,314.38	2,978.62
Roanoke River	6,442	2,980	800	0	20,708	23,688	163.46	420.29
Shenandoah River	13,960	4,745	1,700	0	35,434	41,879	519	1,196.00
Tennessee River ^{4,5}	5,359	1,580	0	7,580	9,393	10,973	31.95	303.54
York River	1,282	2,200	3,600	0	21,728	27,528	231.12	132.72
Totals	180,585	52,294	14,100	23,799	581,904	657,040	3,798.66	6,931.07

Linear footages and acreages included in this table include estimates which may be changed in future reports, as the projects are in various phases of completion.

lf - linear feet

ac - acre

NTW - Additional Protected Acreage is reported under the non-tidal wetland summary

1 - Two projects include both Channel Restoration/Enhancement and Livestock Exclusion activities along the same channel length (950 lf; 6,877 lf)

2 - The Rappahannock River Fish Passage project is not included in the table

3 - One project includes both Riparian Buffer Planting and Livestock Exclusion along the same channel length (2,000 lf)

4 - One project includes both Livestock Exclusion and Stream and/or Riparian Buffer Preservation activities along the same channel length (6,000 lf)

5 - One project includes both Channel Restoration/Enhancement and Livestock Exclusion activities along the same channel length (1,580 lf)

Mitigation Area refers to linear footage and/or acreage included under a "no-touch" buffer

Additional Protected Acreage refers to acreage included under the protective instrument placed on the property by the program which does not qualify for mitigation due to specified allowable activities (e.g., silviculture, agriculture)

Through the end of 2008, the Fund has been used to mitigate for impacts to streams in all basins (Table 17) except for the Atlantic Ocean and the Upper James River Basins. The majority of stream impacts utilizing the Fund for mitigation have occurred in the Potomac River Basin, which has accrued over 76,000 linear feet of impacts. Additional basins with high impacts include the Middle James River, Lower James River, Shenandoah River, and Rappahannock River Basins. The Fund has been used to mitigate for relatively few impacts (less than 7,000 lf) in the Chesapeake Bay, Chowan River, New River, Roanoke River, and York River Basins.

Appropriately, the Conservancy has focused on the basins with greatest impacts to identify and propose stream mitigation projects. Projects have been identified and approved in all of the basins with greatest mitigation need. Additional projects are needed in basins such as the Lower

James River and the New River and will be a focus for efforts in 2009.

Table 18 details the allocated funds that have been unallocated or returned to the general balance of the Fund. Following closure of twenty-six projects, \$685,975 was unallocated. Land sales associated with five projects returned \$2,046,937 to the Fund. In total, \$2,732,912 of authorized funds has been returned to the general Fund balance.

Table 18: Summary of Authorized Funds Returned to General Balance or Unallocated through 2008

Reason for Return	Amount Approved (\$)	Balance Returned or Unallocated (\$)	Number of Projects
Project closure	1,369,618	685,975	26
Land sales	3,071,700	2,046,937	5
Total	4,441,318	2,732,912	31

Conservancy Focus

In addition to the compensatory mitigation provided by the approved wetland and stream projects, many of the projects greatly contribute to the protection of Virginia's rare plants, animals, and natural communities. Utilizing Conservation by Design, mitigation sites are often located within a conservation framework that provide greater ecological benefit than would an isolated project with the same mitigation activities. The projects are often part of an on-going conservation initiation with comprehensive ecological management plans. The large size of many of the projects (including both the mitigation areas and additional protected acreage) provide significant habitat for wildlife that depend upon large, contiguous forest blocks while providing additional buffering protection for aquatic resources. These projects may also provide corridors to connect preserved properties or surround and buffer a critical area.

Many of the project sites are listed habitat sites for state and/or federal threatened or endangered species and have documented occurrences of the Virginia Department of Conservation and Recreation Natural Heritage Elements. In addition, the projects often provide direct and indirect improvements to impaired systems, such as TMDL listed streams, or added protection to large or significant resource systems, including the Clinch River, Great Dismal Swamp, and the Chesapeake Bay watershed. Several sites also have significant historic or cultural resource preservation benefits or protect unique natural features.

Table 19 is a compiled listing of the rare species, natural communities, and unique natural features that could potentially benefit from the approved mitigation projects of the Fund, through water quality improvement, habitat protection, feeding and nursery habitat protection, and direct enhancement or restoration of the resource. This list was developed utilizing existing conservation planning information, as well as, other data.

Table 19: Conservation Targets

Common Name / Community	Scientific Name	Federal/State Rankings
Virginia stonefly	<i>Acroneuria kosztarabi</i>	G1/S1
northern saw-whet owl	<i>Aegolius acadicus</i>	G5/S1B,S1N
sensitive joint vetch	<i>Aeschynomone virginica</i>	G2/S2
dwarf wedgemussel	<i>Alasmidonta heterodon</i>	G1,G2/S1
elktoe	<i>Alasmidonta marginata</i>	G4/S1,S2
pearly everlasting	<i>Anaphalis margaritacea</i>	G5/S1
Elliott's aster	<i>Aster puniceus elliotii</i>	G5T34/S1
tropical water-hyssop	<i>Bacopa innominata</i>	G3,G5/S2
upland sandpiper	<i>Bartramia longicauda</i>	G5/S1B
aster-like boltonia	<i>Boltonia asteroides</i>	G5/S3
Carolina boltonia	<i>Boltonia caroliniana</i>	G4/S2
Carolina fanwort	<i>Cabomba caroliniana</i>	G3G5/S1
Price's cave isopod	<i>Caecidotea pricei</i>	G3G4/S2S3
hoary elfin	<i>Callophrys polios</i>	S1S3
mountain bittercress	<i>Cardamine clematitis</i>	G2G3
epiphytic sedge	<i>Carex decomposita</i>	G3/S2
a sedge	<i>Carex striata</i>	G4/S2
purple finch	<i>Carpodacus purpureus</i>	G5/S1B,S5N
hermit thrush	<i>Catharus guttatus</i>	G5/S1B,S5N
Atlantic white cedar	<i>Chamaecyparis thyoides</i>	G4/S2
northeastern beach tiger beetle	<i>Cicindela dorsalis ssp. dorsalis</i>	Threatened
northern harrier	<i>Circus cyaneus</i>	G5/S1S2B,S3N
sawgrass	<i>Cladium mariscus var. jamaicense</i>	G5T5/S1
spreading pogonia	<i>Cleistes divaricata</i>	G4/S1
bunchberry	<i>Cornus Canadensis</i>	G5/S1
Virginia big-eared bat	<i>Corynorhinus townsendii virginianus</i>	G4T2/S1
Potomac sculpin	<i>Cottus bairdi</i>	Potomac and James restricted
timber rattlesnake	<i>Crotalus horridus</i>	G4TUQ/S1
canebrake rattlesnake (coastal plain population)	<i>Crotalus horridus</i>	G4TUQ/S1
eastern hellbender	<i>Cryptobranchus alleganiensis</i>	G3G4/ S2S3
spectaclecase	<i>Cumberlandia monodonta</i>	G3/S1
button-bush dodder	<i>Cuscuta cephalanthi</i>	G5/S1
pretty dodder	<i>Cuscuta indecora</i>	G5/S2
steelcolor shiner	<i>Cyprinella whipplei</i>	G5/S1
showy lady's slipper	<i>Cypripedium reginae</i>	G4/S1
magnolia warbler	<i>Dendroica magnolia</i>	G5/S2B
showy tick-trefoil	<i>Desmodium canadense</i>	G5/S1S2
beaked spikerush	<i>Eleocharis rostellata</i>	G5/S3
yellow lance	<i>Elliptio lanceolata</i>	G2G3/S2S3
alder flycatcher	<i>Empidonax alnorum</i>	G5/S1B
big bluet	<i>Enallagma durum</i>	G5/S3
oyster mussel	<i>Epioblasma capsaeformis</i>	G1/S1
Parker's pipewort	<i>Eriocaulon parkeri</i>	G3/S2
bluebreast darter	<i>Etheostoma camurum</i>	G4/S2
ashy darter	<i>Etheostoma cinereum</i>	G2G3/S1
longfin darter	<i>Etheostoma longimanum</i>	James River endemic

Common Name / Community	Scientific Name	Federal/State Rankings
riverweed darter	<i>Etheostoma podostemone</i>	G4
wounded darter	<i>Etheostoma vulneratum</i>	G3/S2S3
scarce swamp skipper	<i>Euphyes dukesii</i>	G3/S2
American peregrine falcon	<i>Falco peregrinus anatum</i>	State threatened, DM
Appalachian springsnail	<i>Fontigens bottimeri</i>	G2/S1S2/SE
Tennessee pigtoe	<i>Fusconaia barnesiana</i>	G2G3/S2S3
shiny pigtoe	<i>Fusconaia cor</i>	G1/S1
fine-rayed pigtoe	<i>Fusconaia cuneolus</i>	G1/S1
finerayed pigtoe	<i>Fusconaia cuneolus</i>	G1/S1
Atlantic pigtoe	<i>Fusconaia masoni</i>	G2/S2
wood turtle	<i>Glyptemys insculpta</i>	G4/S2
American bald eagle	<i>Haliaeetus leucocephalus</i>	G5/S2S3
cracking pearlymussel	<i>Hemistena lata</i>	G1/S1
fox-tail barley	<i>Hordeum jubatum</i>	G1/S1
Roanoke hogsucker	<i>Hypentelium roanokense</i>	G5
mountain brook lamprey	<i>Ichthyomyzon greeleyi</i>	G3,G4/S2
spiny riversnail	<i>Io fluviialis</i>	G2/S2
small whorled pogonia	<i>Isotria medeoloides</i>	G2/S2
least bittern	<i>Ixobrychus exilis</i>	G5/S2
jointed rush	<i>Juncus articulatus</i>	G5/S2
narrow-panicked rush	<i>Juncus brevicaudatus</i>	G5/S2
big-head rush	<i>Juncus megacephalus</i>	G4G5/S2
sheep-laurel	<i>Kalmia angustifolia</i>	G5/S3
eastern lampmussel	<i>Lampsilis radiata</i>	G5/S2S3
loggerhead shrike	<i>Lanius ludovicianus</i>	G4/S2B,S3N
Tennessee heelsplitter	<i>Lasmigona holstonia</i>	G3/S1
green floater	<i>Lasmigona subviridis</i>	G3/S2
birdwing pearly mussel	<i>Lemiox rimosus</i>	G1/S1
Kemp's Ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered
fragile papershell	<i>Leptodea fragilis</i>	G5/S1
onyx rocksnail	<i>Leptoxis praerosa</i>	G5/S1,S3
slabside pearl mussel	<i>Lexingtonia dolabelloides</i>	G2/S2
Virginia pigtoe	<i>Lexingtonia subplana</i>	G1/S1
black sandshell	<i>Ligumia recta</i>	G5/S2
Carolina lilaepsis	<i>Lilaeopsis carolinensis</i>	G3/S1,S2
Swainson's warbler	<i>Limothlypis swainsonii</i>	G4/S2B,S3N
elongated lobelia	<i>Lobelia elongata</i>	G4,G5/S1
winged seedbox	<i>Ludwigia alata</i>	G3G4/S1
river redhorse	<i>Moxostoma carinatum</i>	G4/S2S3
eastern small-footed myotis	<i>Myotis leibii</i>	G3/S1
popeye shiner	<i>Notropis ariommus</i>	G3/S2S3
emerald shiner	<i>Notropis atherinoides</i>	G5/S1S2
roughhead shiner	<i>Notropis semperasper</i>	James River endemic
mirror shiner	<i>Notropis spectrunculus</i>	G4/S2
yellowfin madtom	<i>Noturus flavipinnis</i>	G1/S1
stonecat	<i>Noturus flavus</i>	G5/S2
orange fin madtom	<i>Noturus gilberti</i>	G2

Common Name / Community	Scientific Name	Federal/State Rankings
eastern glass lizard	<i>Ophisaurus ventralis</i>	G5/S1
large-leaved grass of Parnassus	<i>Parnassia grandifolia</i>	G3G4/S2
joint paspalum	<i>Paspalum distichum</i>	G5/S1
blotchside logperch	<i>Percina burtoni</i>	G2G3/S1
channel darter	<i>Percina copelandi</i>	G4/S2
longhead darter	<i>Percina macrocephala</i>	G3/S1S2
stripeback darter	<i>Percina notogramma</i>	James River endemic
Roanoke logperch	<i>Percina rex</i>	G1, G2, LE
caddisfly	<i>Phylocentropus carolinus</i>	G5
slender-leaved dragon-head	<i>Physostegia leptophylla</i>	G4G5/S2
Peaks of Otter salamander	<i>Plethodon hubrichti</i>	G2/S2
James River spiny mussel	<i>Pleurobema collina</i>	G1
Tennessee clubshell	<i>Pleurobema oviforme</i>	G2G3/S2S3
pyramid pigtoe	<i>Pleurobema rubrum</i>	G2G3/S1
rare skipper	<i>Problema bulenta</i>	G2G3/S1 SOC
thin-necked cave beetle	<i>Pseudanophthalmus parvicollis</i>	G1S1
fluted kidneyshell	<i>Ptychobranhus subtentum</i>	G2/S2
rough rabbits foot	<i>Quadrula cylindrica</i>	G3T2/S2
Appalachian monkeyface	<i>Quadrula sparsa</i>	G1/S1
goldencrowned kinglet	<i>Regulus satrapa</i>	G5/S2B,S5N
alderleaf buckthorn	<i>Rhamnus alnifolia</i>	G5/S1
capillary beakrush	<i>Rhynchospora capillacea</i>	G5/S1S2
bigeye jumprock	<i>Scartomyzon ariommus</i>	G4
purple oat-grass	<i>Schizachne purpurascens</i>	G5S1
hard-stemmed bulrush	<i>Scirpus acutus</i>	G5/S1
redbreasted nuthatch	<i>Sitta canadensis</i>	G5/S2B,S4N
roundleaf clover	<i>Solidago patula</i>	G5/S1
Dismal Swamp southeastern shrew	<i>Sorex longirostris fisheri</i>	G5T2/S2
yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	G5/S1B,S4N
sweetscent ladies'-tresses	<i>Spiranthes odorata</i>	G5/S3
Caspian tern	<i>Sterna caspia</i>	G5/S1B,S2N
silky camellia	<i>Stewartia malachodendron</i>	G4/S2
Bigger's Cave amphipod	<i>Stygobromus biggersi</i>	G2G4/S1S2
Shenandoah Valley cave amphipod	<i>Stygobromus gracilipes</i>	G3G4/S2S3
Bewick's wren	<i>Thryomanes bewickii</i>	G5T2Q/S1B
Spanish moss	<i>Tillandsia usneoides</i>	G5/S1
purple lilliput	<i>Toxolasma lividus</i>	G2/S1
Fraser's marsh St. John's-wort	<i>Triadenum fraseri</i>	G5/S1
least trillium	<i>Trillium pusillum var. virginianum</i>	G3T3/S2
winter wren	<i>Troglodytes troglodytes</i>	G5/S2B,S4N
American black bears	<i>Ursus americanus</i>	Threatened
large cranberry	<i>Vaccinium macrocarpon</i>	G4/S2
purple bean	<i>Villosa perpurpurea</i>	G1/S1
loblolly pine savanna natural community		
non-riverine saturated forest community		
Appalachian terrestrial dung community		
Appalachian cave drip pool/epikarstic community		

Common Name / Community	<i>Scientific Name</i>	Federal/State Rankings
Appalachian cave stream community		
Appalachian cave stream riparian community		
oligotrophic saturated scrub community		
Atlantic white cedar swamp community		
brackish marsh community		
pocosin community		
spruce/fir forest		
high elevation cove forest		
Terrestrial Community mountain/piedmont acidic seepage swamp		

In conclusion, as intended, the mitigation payments for numerous, small impacts have been collectively pooled to provide large scale, ecologically preferable mitigation. The Fund continues to provide excellent leverage for the mitigation dollar. From 241 acres of wetland impacts, over 640 acres are being restored and over 18,400 acres have been protected. Likewise with streams, from 180,585 linear feet of impacts, over 52,000 linear feet of streams are being restored or enhanced and over 675,000 linear feet have been protected. At the close of 2008, over two-thirds of the accumulated mitigation payments have been authorized to a diverse array of non-tidal wetland, tidal wetland, and stream mitigation projects across Virginia. These projects provide a suite of typical wetland and stream restoration, enhancement, and preservation opportunities, as well as, unique projects aimed at improving water quality and/or providing additional ecological benefits. The Conservancy, with its partners, will continue to pursue the appropriate mitigation projects in river basins with mitigation need and available funds.

I. Introduction

The Virginia Aquatic Resources Trust Fund (Fund) is administered in partnership by The Nature Conservancy of Virginia (Conservancy) and the Norfolk District United States Army Corps of Engineers (Corps) to provide compensatory mitigation for permitted wetland and stream impacts in Virginia through an in-lieu-fee (ILF) agreement. The Fund provides one option for a permit applicant to address compensatory mitigation requirements associated with Section 404 and 401/Virginia Water Protection (VWP) permits issued by the Corps and the Virginia Department of Environmental Quality (DEQ), respectively. By consolidating the mitigation requirements of multiple small projects, the Fund is able to implement large-scale watershed efforts that restore, enhance, and protect water quality. The program is dedicated to providing the greatest compensatory mitigation value, while providing a specific emphasis on the protection of Virginia's rare plants, animals, and natural communities. These additional ecological benefits, which may also result in a higher potential for a project's long-term success, are achieved, to a large extent, through the Conservancy's conservation planning and implementation efforts. The Fund attempts to maximize the ecological benefits of compensatory mitigation by locating mitigation projects in identified conservation priority areas within each watershed. For instance, many of the Fund's mitigation projects have been integrated into areas identified by the Conservancy's overall Conservation by Design strategy as important to protect the rare plants, animals, and natural communities of Virginia.

The Fund was established in 1995 as the Virginia Wetlands Restoration Trust Fund and operates in accordance with a Memorandum of Understanding (MOU) between the Conservancy and the Corps. The MOU was amended in 2003 to, in part, address impacts to stream resources throughout Virginia. Through the revised MOU, the name of the Fund was changed to the Virginia Aquatic Resources Trust Fund.

As stated in the MOU, a primary goal of the Fund is to ensure a "no net loss" of acreage, functions, and values through compensatory mitigation completed for impacts to aquatic resources of the same type and within the same watershed as the impacts. Typically this is done using a watershed approach to complete mitigation projects located in the same major river basin as the impacts. The fourteen major river basins used for this approach are the Atlantic Ocean, Big Sandy River, Chesapeake Bay, Chowan River, Lower James River, Middle James River, Upper James River, New River, Potomac River, Rappahannock River, Roanoke River, Shenandoah River, Tennessee River, and York River. Each basin is composed of the 8-digit hydrologic unit codes (HUC), with the exception that the Chesapeake Bay HUC's and Atlantic Ocean HUC are separated for the purposes of the Fund reporting. The partnership with the Conservancy facilitates the overall and primary operational concept of the Fund which is to efficiently use the mitigation payments from many small impacts to provide larger, more cost-effective, and ecologically preferable mitigation projects.

The Fund is typically used to mitigate for impacts of less than three acres of wetlands and/or less than 2,000 linear feet (lf) of stream channel. The Fund is also used to provide mitigation for unauthorized impacts as directed by the agencies. The ability of a permit applicant to use the Fund as the selected mitigation option is at the discretion of the regulatory agencies. The Corps determines the amount of the permit applicant's mitigation payment required to provide the appropriate mitigation for the permitted impact. The mitigation payments are held by the Conservancy in an interest-generating account. These payments are then used by the Conservancy to complete the required stream and/or wetland mitigation. Potential projects are proposed by the Conservancy, and Corps approval of both the proposed project and the requested

funding amount is required prior to the initiation of formal activities on the project. Potential and proposed projects are also coordinated with, and reviewed by, DEQ and United States Fish and Wildlife Service (FWS) during a monthly agency meeting.

The mitigation sites are permanently protected, typically through recordation of a conservation easement or ownership by the Conservancy. Alternative protection methods may be implemented with approval from the Conservancy and the Corps. All interest earned and funds not spent on approved projects following project closure remain in the general balance of the Fund.

The VWP Permit Regulation (9VAC 25-210-115 E) defines the criteria for DEQ's approval of an ILF program. In accordance with this regulation, DEQ, acting on behalf of the State Water Control Board (Board), may approve the use of an ILF fund program by approving the use of a fund for a specific project when approving a VWP Permit or by granting approval of a fund at a Board meeting. In a conditional letter dated January 31, 2007, DEQ granted approval for the use of the Fund as a compensatory mitigation option for stream and wetland impacts permitted under the VWP Permit Program through June 30, 2008. Subsequently in another conditional letter dated October 8, 2008, DEQ granted approval for use of the Fund through December 31, 2009. The above-referenced regulation also requires the submittal of annual reports to the Board detailing the activities of the ILF program. This report is intended to fulfill this regulatory requirement.

Through December 31, 2008, the Fund has been used to mitigate for non-tidal wetland, tidal wetland, and stream impacts in the fourteen major river basins in Virginia. These impacts have generated \$52,784,379.09 in mitigation payments as summarized in Table 20. From these mitigation payments, the Corps has authorized \$35,948,580.65 for the Conservancy to complete activities on 101 potential mitigation projects. The Conservancy is actively pursuing mitigation activities on 92 of these sites in twelve of the major river basins. A map depicting the location of these sites across the state is included in Attachment B.

Table 20: Summary of Impacts, Mitigation Payments, and Funds Authorized from 1995-2008

Resource Type	Impacts	Mitigation Payments (\$)	Authorized Funds (\$)
Non-tidal Wetland	238.74 acres	20,151,801.68	13,455,081.50
Tidal Wetland	2.612 acres	628,551.84	534,690.50
Stream (pre-USM)	163,428 linear feet	24,970,392.05	21,221,170.65
Stream (USM)	17,157 linear feet	7,033,633.52	737,638.00
Totals		52,784,379.09	35,948,580.65

The following table summarizes the achievements of the Fund through 2008, indicating the amount of impacts by resource type and the total acres of wetlands and linear feet of streams restored and protected.

Table 21: Program-wide Leverage through 2008

Resource Type	Impacts	Restored	Protected
Non-tidal Wetland	238.74 acres	608.79 acres	3,769.80 acres
Tidal Wetland	2.612 acres	23.4 acres	308.73 acres
Stream	180,585 linear feet	52,294 linear feet	657,040 linear feet
Upland/Riparian Buffer	N/A	235.55 acres	5,062.6 acres
Additional Protected	N/A	N/A	9,264.25 acres
Total Acres	N/A	632 acres; 52,294 lf	18,405.38 acres

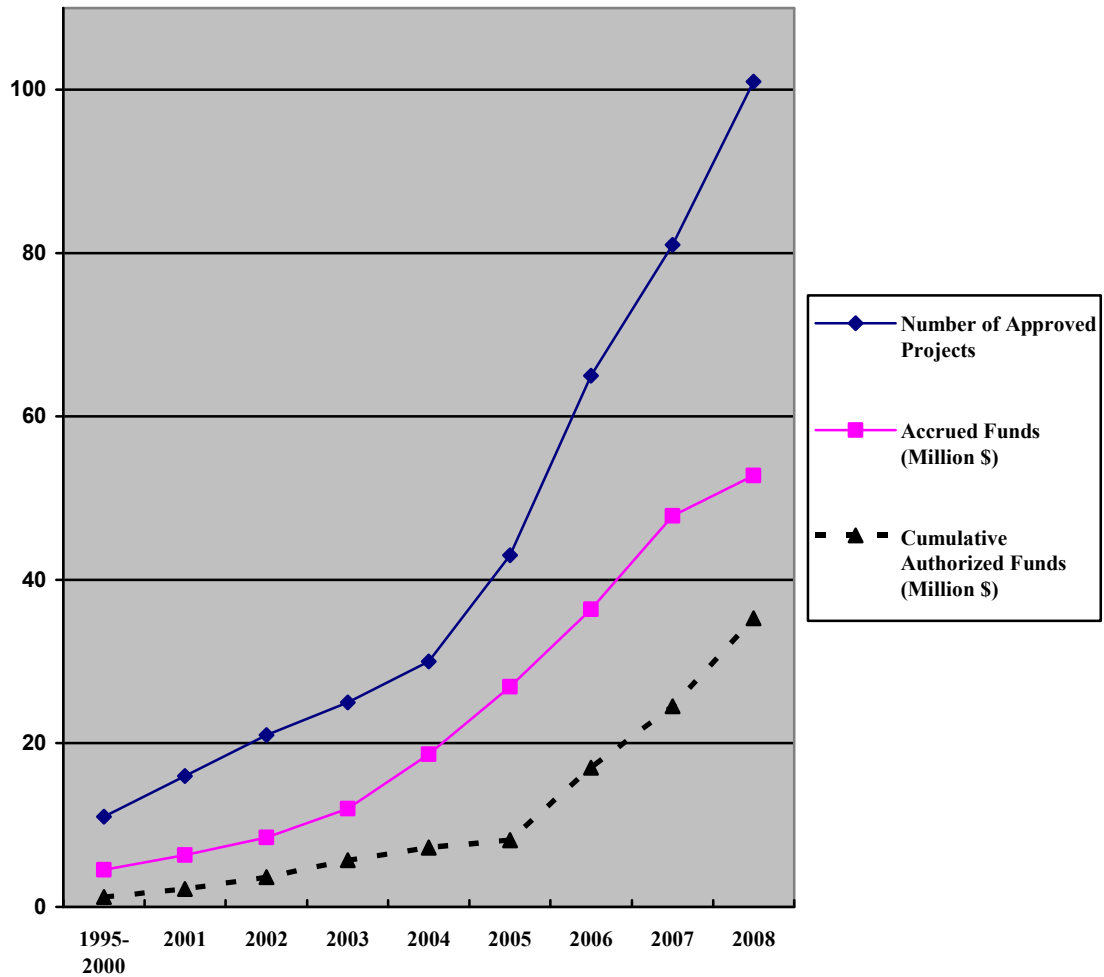
Table 22 details the number of payments made to the Fund each year for each resource type since its inception in 1995.

Table 22: Summary of Payments into the Fund

Year	Non-tidal Wetland	Tidal Wetland	Stream	Total Payments
1995	2	0	0	2
1996	13	3	0	16
1997	16	6	0	22
1998	21	4	0	25
1999	22	13	0	35
2000	31	4	0	35
2001	54	4	6	64
2002	88	8	3	99
2003	88	5	3	96
2004	57	5	57	119
2005	48	2	88	138
2006	43	6	87	136
2007	31	0	42	73
2008	20	1	28	49
Total	534	61	314	909

Figure 1 depicts the activity and growth of the Fund over the course of its operation. As intended, the mitigation payments for numerous, small impacts have been collectively pooled to provide large scale, ecologically preferable mitigation. As the available balance of the Fund has grown, the ability of the program to pursue mitigation projects has increased. With the addition of two program staff in 2005, increasing the total program staff to three, the number of approved projects has nearly tripled in the past three years. At the close of 2008, with well over half of the accumulated mitigation payments authorized to a diverse array of non-tidal wetland, tidal wetland, and stream mitigation projects across Virginia, two additional staff positions were added to assist with project implementation. Mitigation projects have included a suite of typical wetland and stream restoration, enhancement, and preservation opportunities, as well as unique projects aimed at improving water quality and/or providing additional ecological benefits. Examples of distinctive projects include the re-establishment of oyster reefs with submerged aquatic vegetation beds and the removal of earthen dams with installation of a fish passage structure to allow the migration of anadromous fishes.

Figure 1: Comparison of Accrued Funds, Approved Projects and Authorized Funds



II. Impacts, Revenues, and Operational Costs through 2008

This section provides a summary of impacts and associated mitigation payments for all three resource types (non-tidal wetland, tidal wetland, and stream), presented as an annual total and cumulatively by major river basin. Additional program revenues and operational costs are also detailed in this section.

Impacts and Associated Mitigation Payments

The following section details the impacts and associated mitigation payments for non-tidal wetlands, tidal wetlands, and streams.

Non-Tidal Wetlands

Tables 23 and 24 provide the impact and mitigation payment summaries for non-tidal wetlands. The Fund has been used to mitigate for non-tidal impacts each year since its inception. As of the end of 2008, the Fund has been used to mitigate for 238.74 acres of non-tidal wetland impacts across all fourteen major river basins. These impacts have generated total mitigation payments of \$20,151,802 to the Fund for non-tidal wetlands.

Table 23: Non-tidal Wetland Impacts and Mitigation Payments by Year

Year	Impacts (ac)	Mitigation Payments (\$)
1995	2.90	65,000
1996	20.52	460,225
1997	26.0	1,305,486
1998	16.265	779,260
1999	13.920	967,583
2000	7.355	835,343
2001	12.099	1,243,901
2002	20.026	1,996,644
2003	28.366	3,233,168
2004	30.319	1,978,550
2005	6.688	830,141
2006	17.386	1,961,568
2007	22.186	3,138,108
2008	14.71	1,356,826
Total	238.74	20,151,802

A summary of non-tidal wetland impacts, wetland impact type, and mitigation payments by basin is provided in Table 24. Impacts have occurred in all fourteen major river basins. Historically, the majority of non-tidal wetland impacts (more than 20 acres) and associated mitigation payments have accumulated in the following basins: Chesapeake Bay, Chowan River, Lower James River, and Middle James River. A moderate amount of impacts and mitigation payments have accumulated in the Potomac River, Rappahannock River, York River, Shenandoah River, and Tennessee River basins. Relatively few impacts (less than 5 acres) and associated payments have been received in the Atlantic Ocean, Big Sandy, Upper James River, New River, and Roanoke River basins. Roughly three quarters of all impacts were to palustrine forested wetlands, with the remaining quarter split between emergent and shrub-scrub wetland types.

Table 24: Non-tidal Wetland Impacts and Mitigation Payments by Basin through 2008

Basin	Non-Tidal Wetland Type Impacted			Total Impacts (ac)	Mitigation Payments (\$)
	PEM or POW (ac)	PSS (ac)	PFO (ac)		
Atlantic Ocean	0.03	0.00	0.59	0.62	71,375
Big Sandy	0.02	0.09	0.00	0.11	8,046
Chesapeake Bay	3.92	1.75	38.79	44.46	5,969,504
Chowan	5.39	3.14	33.02	41.54	1,614,747
Lower James	6.44	3.07	60.81	70.32	4,588,772
Middle James	1.69	2.87	15.50	20.05	1,709,657
Upper James	1.01	0.21	1.88	3.10	143,301
New	0.94	0.08	0.00	1.02	62,030
Potomac	2.97	0.75	4.16	7.86	1,402,078
Rappahannock	1.13	0.00	9.08	10.21	1,471,625
Roanoke	0.82	0.49	2.71	4.02	319,533
Shenandoah	5.58	0.66	1.82	8.07	742,314
Tennessee	3.88	12.72	1.69	18.29	883,520
York	0.70	0.41	7.96	9.07	1,165,299
Total	34.52	26.24	178.01	238.74	20,151,802
PEM: Palustrine Emergent Wetland; POW: Palustrine Open Water; PSS: Palustrine Scrub-Shrub; PFO: Palustrine Forested Wetland					

Tidal Wetlands

Tables 25 and 26 provide the impact and mitigation payment summaries for tidal wetland resources. The Fund has been used to mitigate for impacts to tidal wetlands each year since 1996. As of the end of 2008, the Fund has been used to mitigate for 2.61 acres of tidal wetland impacts across six major river basins. These impacts have generated total mitigation payments of \$628,552 to the Fund for tidal wetlands.

Table 25: Tidal Wetland Impacts and Mitigation Payments by Year

Year	Impacts (acres)	Mitigation Payments (\$)
1996	0.05	13,000
1997	0.259	15,432
1998	0.301	47,965
1999	0.319	31,885
2000	0.092	12,113
2001	0.036	11,585
2002	0.159	19,327
2003	0.060	12,202
2004	0.078	33,650
2005	0.020	2,684
2006	0.656	166,359
2007	0.0	0
2008	0.583	262,350
Total	2.61	628,552

A summary of tidal wetland impacts, wetland impact type, and mitigation payments by basin is provided in Table 26. Through the end of 2008, tidal impacts have been paid into the Fund from all tidally influenced basins except the Rappahannock River Basin. Tidal impacts are in general very small and infrequently accrued into the Fund. Most tidal wetland impacts paid into the Fund have occurred in the Atlantic Ocean Basin (1 acre) and the Chesapeake Bay Basin (1 acre), accounting for two-thirds of all tidal impacts amassed by the Fund. The majority of tidal wetland impacts occurred to estuarine emergent wetlands (e.g. salt-marsh) although open water/unconsolidated bottom impacts

accounted for roughly a quarter of the impacted acres.

Table 26: Tidal Wetland Impacts and Mitigation Payments by Basin through 2008

Basin	Tidal Wetland Type Impacted		Impacts (ac)	Mitigation Payments (\$)
	EEM (ac)	EOW/UB (ac)		
Atlantic Ocean	0.781	0.225	1.006	176,705
Chesapeake Bay	0.789	0.267	1.056	320,932
Chowan	0.014	0.000	0.014	2,138
Lower James	0.374	0.052	0.426	88,842
Potomac	0.060	0.050	0.110	38,935
York	0.000	0.000	0.000	1,000
Total	2.018	0.594	2.612	628,552
EEM: Estuarine Emergent Wetland; EOW: Estuarine Open Water; UB: Unconsolidated Bottom				

Streams

Tables 27 and 28 provide the impact and mitigation payment summary information for streams. The Fund has been used to mitigate for stream impacts since 2001. However, the majority of the use of the Fund as compensatory mitigation for stream impacts has been since the revision of the MOU in 2003. Beginning in 2007, the Fund began tracking stream impacts as assessed by the Unified Stream Methodology (USM) that was jointly released by the Corps and DEQ, and has tracked these impacts separately for reporting purposes. As of the end of 2008, the Fund has been used as mitigation for 180,585 linear feet of stream impacts across twelve of the major river basins. These impacts have generated \$32,004,026 in total mitigation payments to the Fund for streams.

Table 27: Stream Impacts and Mitigation Payments by Year

Year	Impacts (lf)	Mitigation Payments (\$)
2001	5,973	550,286
2002	1,115	115,565
2003	2,576	274,785
2004	40,714	4,646,363
2005	55,095	7,422,214
2006	41,389	7,377,885
2007	14,925	4,360,617
2007 (USM)	9,194	3,924,017
2008	1,641	222,677
2008 (USM)	7,963	3,109,617
Total	180,585	32,004,026

A summary of stream impacts and mitigation payments by basin is provided in Table 28. Through the end of 2008, the Fund has been used to mitigate for impacts to streams in all basins except for the Atlantic Ocean and the Upper James River basins. The Potomac River Basin has accrued more than twice as much as any other basin, with over 75,000 linear feet of impacts. The Fund has been used to mitigate for a moderately high number of impacts (between 10,000 and 30,000 linear feet) in the Lower James River, Middle James River, Shenandoah River, and Rappahannock River basins, while relatively few impacts (less than 7,000 linear feet) have

accrued in the Tennessee River Chesapeake Bay, Chowan River, New River, Roanoke River, Big Sandy and York River basins.

Table 28: Stream Impacts and Mitigation Payments by Basin through 2008

Basin	Impacts (linear feet)	Mitigation Payments (\$)
Big Sandy	3,006	711,939
Chesapeake Bay	1,399	272,568
Chowan	1,625	368,512
Lower James	22,948	5,055,786
Middle James	29,312	5,155,050
New	3,078	290,318
Potomac	76,495	11,598,115
Rappahannock	15,679	4,386,863
Roanoke	6,442	982,955
Shenandoah	13,960	2,293,135
Tennessee	5,359	725,554
York	1,282	163,231
Total	180,585	32,004,026

Additional Revenues and Operational Costs

Upon receipt by the Conservancy, the mitigation payments are deposited in an interest generating account. The Conservancy provides the Corps with the account statements within thirty days of the statement issuance date. All earned interest, any remaining authorized funds at project closure, and any proceeds resulting from the sale of a project property (sold with a protective instrument to protect the mitigation area) remain in the Fund to accomplish additional mitigation projects.

Through 2008, the Fund balance generated \$4,371,652 in interest. These monies are not directly associated with a specific permitted impact; therefore, they are not associated with specific mitigation requirements. Table 29 shows allocated funds that have been unallocated or returned to the general balance of the Fund. Funds become unallocated when projects are closed out with unspent funds remaining in the project budget, or when the project site is transferred through a land sale. Following closure of twenty-six projects, \$685,975 was unallocated. Land sales associated with five projects returned \$2,046,937 to the Fund. In total, \$2,732,912 of allocated funds has been returned to the general Fund balance.

Table 29: Summary of Allocated Funds Returned to General Fund Balance or Unallocated through 2008

Number of Projects	Amount Approved (\$)	Balance Returned or Unallocated (\$)	Reason for Return
26	1,369,618	685,975	Project closure
5	3,071,700	2,046,937	Land transfers
31	4,441,318	2,732,912	Total

There are currently five staff positions funded by the program. The first staff member, a Wetland Restoration Specialist, was hired in June 2001, and the Protection Specialist and Stream Restoration Specialist were hired in January 2005. Two Restoration Assistants were hired in

November 2008. As of December 31, 2008, the Corps has authorized a total of \$1,550,720 to fund these five positions. The Corps has also authorized \$14,589 to a general equipment cost center, which has been used to purchase field supplies used across multiple sites, such as GPS units.

In accordance with the 2003 revised MOU, the Conservancy receives an overhead fee of 3% of each mitigation payment. The original MOU specified a percentage based upon acquisition costs. These funds are used to reimburse overhead and related administrative costs incurred by the Conservancy. Through December 31, 2008, total overhead charges were \$1,238,213. Additional bank fees and associated charges through December 31, 2008 totaled \$9,776.

In summary, as of December 31, 2008, the Fund has generated \$4,371,652 in interest, and has incurred total costs or authorizations of \$2,813,298 to fund staff positions, general equipment, and overhead and bank fee charges.

III. Summary of 2008 Impact and Mitigation Payments, Project Proposals, and Funding Authorizations

In 2008, the Fund was used as the compensatory mitigation option for stream, tidal wetland and non-tidal wetland impacts in eleven of the major river basins. There were no new impacts paid into the Fund within the Big Sandy River, Upper James River, and York River basins. The Conservancy requested funding to complete mitigation activities for 21 new projects and additional funding for 13 previously approved projects. The Corps granted funding approval for 33 of these requests. A detailed summary of these activities is provided below.

Impacts and Mitigation Payments

The Fund was used as the compensatory mitigation option for numerous non-tidal wetland, tidal wetland, and stream impacts across the state in 2008. Table 30 details the impacts and mitigation payments that were received by the Fund during 2008. The Fund was used to compensate for: 14.71 acres of non-tidal wetland impacts with an average mitigation payment of \$87,355 per acre; 0.58 acres of tidal wetland impacts with an average mitigation payment of \$452,328 per acre; and 9,604 linear feet of stream impacts with an average mitigation payment of \$347 per linear foot. In total, the Fund received \$4,879,650 in mitigation payments in 2008. This amount accounts for nearly one tenth of the total mitigation payments received by the Fund to date.

Table 30: Impacts and Mitigation Payments in 2008

Resource Type	Impacts	Mitigation Payments (\$)
Non-tidal Wetland	14.71 acres	1,285,006
Tidal Wetland	0.58 acres	262,350
Stream	9,604 linear feet	3,332,294
Total		4,879,650

Mitigation Project Proposals and Approvals

As per the MOU, the Corps seeks comments from DEQ and the FWS prior to the approval or denial of a specific Fund mitigation proposal. Since 2006, monthly agency meetings have been held for project proposal review and coordination. During these meetings, the Conservancy presents potential projects to the Corps, FWS, and DEQ. These meetings were initiated to provide a forum for discussion and review of the projects, while attempting to streamline the review and coordination process.

Using the watershed approach to select mitigation projects in the same major river basin as the impacts, the Conservancy routinely identifies river basins which have high mitigation need (impacts which have not been mitigated for through other projects) and available funds. In 2008, targeted efforts were initiated in several basins to provide suitable mitigation sites. The primary target areas for wetlands included the Rappahannock River, Chesapeake Bay, Shenandoah River, and Roanoke River basins. The targeted basins for streams included the Lower James River and Potomac River basins. These basins represent several of the watersheds with the highest impacts in the state as shown previously in Section II.

In 2008, the Conservancy requested funding to complete numerous mitigation activities, including full restoration expenses, land acquisition, appraisals, feasibility studies, and purchase

of mitigation bank credits, for 34 projects. These projects included mitigation opportunities for non-tidal and tidal wetlands and streams across ten of the major river basins. The Corps granted funding approval for 33 of the projects. One project has been deferred until additional information can be acquired. Table 31 provides summary information for the 33 projects approved in 2008.

In 2008, \$11,255,448 was authorized towards the mitigation activities associated with the 33 approved projects. The authorized funds will complete mitigation projects across ten major river basins. These approved projects provide a suite of wetland and stream restoration, enhancement, and preservation mitigation opportunities. Many of the projects involve significant stream footage or wetland acreage, and several provide mitigation opportunities for multiple resource types.

A total of \$4,322,578 was authorized for non-tidal wetland mitigation projects in eight river basins including the Chowan River, Chesapeake Bay, Lower James River, Potomac River, Roanoke River, Rappahannock River, Shenandoah River, and Tennessee River basins. Money was authorized for four tidal mitigation projects in the Atlantic Ocean, Chesapeake Bay, Lower James River and Potomac River basins (\$135,372). A total of \$6,797,498 was authorized for stream projects in the Chesapeake Bay, Chowan River, Lower James River, Middle James River, Potomac River, Roanoke River, Rappahannock River, Shenandoah River, and Tennessee River basins.

Working with numerous partners, many of the projects contribute to large scale conservation efforts. While providing compensatory mitigation, many of these projects also contribute to the protection of Virginia's rare plants, animals, and natural communities including such highlights as northern saw-whet owl (*Aegolius acadicus*), elktoe (*Alasmidonta marginata*), upland sandpiper (*Bartramia longicauda*), mountain bittercress (*Cardamine clematidis*), hermit thrush (*Catharus guttatus*), northern harrier (*Circus cyaneus*) timber rattlesnake (*Crotalus horridus*), magnolia warbler (*Dendroica magnolia*), wood turtle (*Glyptemys insculpta*) and Tennessee pigtoe (*Fusconaia barnesiana*). Detailed summaries of each project are included in Section V.

The single project proposed in 2008 still pending a funding decision by the Corps is a wetland preservation project in the Chesapeake Bay Basin.

Table 31: Projects Approved in 2008.

Project ID	Project Name	Resource Type	Purpose of Proposal	Proposal Date	Corps Approval Date	Funds Authorized		
						Non-Tidal Wetland Projects (\$)	Tidal Wetland Projects (\$)	Stream Projects (\$)
CH-14	Raccoon Creek Pinelands site	S	M	1/22/08	2/08/08	0	0	77,150
LJ-10	James River site	NTW, S, TW	M	1/07/08 6/06/08	2/08/08 6/27/08	6,500 478,700	0 38,000	6,500 478,700
RP-10	Rappahannock River (Rose 2)	NTW	M	1/22/08 8/04/08	2/08/08 8/28/08	75,000 500	0 0	0 0
RP-11	Mountain Run (EBX)	NTW	M	11/07/07 3/13/08	2/08/08 4/03/08	869,400 29,941	0 0	0 0

Project ID	Project Name	Resource Type	Purpose of Proposal	Proposal Date	Corps Approval Date	Funds Authorized		
						Non-Tidal Wetland Projects (\$)	Tidal Wetland Projects (\$)	Stream Projects (\$)
RO-4	Turkeycock Mountain (Grassy Fork site)	NTW, S	A	1/17/08	2/08/08	1,500	0	1,500
PO-6	Crow's Nest (Stafford Lakes Partnership Phase 1)	NTW, S, TW	M	1/17/08	2/08/08	800,000	38,000	2,262,000
PO-7	Crow's Nest (Stafford Lakes Partnership Phase 2)	S	M	1/17/08	2/08/08	0	0	1,400,000
MJ-9	Southern Shenandoah site	S	M	1/16/08	2/08/08	0	0	40,807
RO-3	Goose Creek-RO (Bedford County site)	NTW, S	M	1/23/08 12/10/08	2/08/08 12/16/08	9,000 231,000	0 0	0 469,000
CH-8	Northwest River (Su)	NTW	M	1/16/08	2/08/08	25,000	0	0
RP-12	Rappahannock River (Norman's Ford – Craig)	NTW	M	1/23/08	2/25/08	150,000	0	0
RP-4	Rappahannock/Rapidan River (City of Fredericksburg)River	S	M	04/03/08	5/07/08	0	0	300,275
TN-5	Pinnacle (Rich)	S	M	6/03/08	6/16/08	0	0	43,090
CB-11	Dragon Run (Revere)	NTW, S	M	7/09/08	6/16/08	12,114	0	2,138
CB-13	Dameron Marsh/HughlettPoint/Fleet Bay (Thompson et al)	NTW, TW	M	3/04/08 10/03/08	6/16/08 11/02/08	40,000 313,000	0 0	0 0
RP-13	Rappahannock River site	NTW, S	M	4/17/08 7/03/08	6/16/08 8/05/08	250,000 27,818	0 0	129,545 27,818
AO-3	SAV 2	TW	M	7/03/08	8/05/08	0	50,000	0
RP-5	Rappahannock River (Wellford)	NTW	M	8/04/08	8/28/08	3,700	0	0
RP-8	Rappahannock River (Collawn, R.)	NTW	M	8/04/08	8/28/08	1,945	0	0
CB-2	New Point Comfort (Trimmer)	NTW, TW	M	8/04/08	8/28/08	2,845	0	0
CH-1	Northwest River (Kellam Riganto)	NTW	M	8/04/08	8/28/08	4,449	0	0
CH-5	Northwest River (Benefits)	NTW	M	8/04/08	8/28/08	6,361	0	0
CH-3	Dismal Swamp (Bruff)	NTW	M	8/04/08	8/28/08	4,969	0	0
SH-4	Shenandoah Mountain/ Cow Knob site	NTW	M	7/15/08	8/28/08	535,836	0	0
LJ-11	Chickahominy River site	NTW, S	A	8/05/08	8/28/08	5,000	0	5,000
SH-5	Cedar Creek site	S	M	8/04/08	8/28/08	0	0	150,000
SH-2	Blacks Run (City of Harrison burg-Purcell Park)	S	M	8/04/08	9/24/08	0	0	130,000
CB-16	Jacobus Creek (Hampton)	TW	M	8/04/08	9/24/08	0	9,372	0

Project ID	Project Name	Resource Type	Purpose of Proposal	Proposal Date	Corps Approval Date	Funds Authorized		
						Non-Tidal Wetland Projects (\$)	Tidal Wetland Projects (\$)	Stream Projects (\$)
RO-5	Poor Mountain (Sanzone)	S	M	9/30/08	11/02/08	0	0	45,000
LJ-12	James River (Blairs Wharf)	NTW, S	M	10/01/08	11/02/08	82,000	0	738,000
TN-6	Rich Mountain site	NTW	M	10/02/08	11/02/08	43,000	0	0
CB-17	Dameron Marsh/HughlettPoint/Fleet Bay (Thompson, William)	NTW	M	10/03/08	11/02/08	313,000	0	0
MJ-10	Meadow Creek Area 3	S	M	12/09/08	12/16/08	0	0	490,975
				Totals		4,322,578	135,372	6,797,498
				Grand Total		11,255,448		
Major River Basins								
CB - Chesapeake Bay River Basin; LJ - Lower James River Basin; MJ - Middle James River Basin; UJ - Upper James River Basin; River Basin; PO - Potomac River Basin; RP - Rappahannock River Basin; RO - Roanoke River Basin; SH - Shenandoah River Basin; TN - Tennessee River Basin; YK - York River Basin								
Resource Types								
TW - Tidal Wetland; NTW - Non-tidal Wetland; S - Stream								
Purpose of Proposal								
M - Mitigation (may include A, AC, C, BS); A - Real Estate Appraisal; AC - Acquisition; C - Conceptual Plan Development; F - Feasibility Study; BS - Boundary Survey								

Mitigation Project Closures

In 2008, the Conservancy closed nine projects previously approved by the Corps, and made a correction to one project (RP-2) closed in 2007, as shown in Table 32. Seven of these projects were closed following completion of all mitigation activities and mitigation credits were assigned. Two of the projects were closed due to the inability to resolve negotiations with the landowners and therefore did not generate any mitigation credit. One project closed in 2007 was corrected in 2008 when excess funds were returned from a partner organization. All unspent funds, or funds generated upon sale or transfer of property, were unallocated at the time of closing and returned to the Fund's general balance. A total of \$512,086 was returned to the general balance of the Fund following closure of these projects.

Table 32: Projects Closed in 2008.

Project ID	Project Name	Corps Closing Date	Amount Approved (\$)	Amount Spent (\$)	Revenue from land transfer (\$)	Total Returned to General Balance (\$)	Credits Assigned
RP-2	Linden Farm	7/27/07 8/05/08	61,894	54,932	0	6,962	Yes
CB-12	Guilford Shores site	8/5/2008	12,732	275	0	12,457	No
LJ-6	Chickahominy River (Rogers-Chenault)	8/5/2008	149,500	56,457	0	93,043	Yes
RO-1	Apple Orchard Mountain (Edwards)	8/5/2008	180,000	176,652	170,904	174,252	Yes
RO-2	Apple Orchard Mountain (City of Bedford)	8/5/2008	23,250	22,866	19,995	20,379	Yes
CB-3	Dragon Run (Calhoun 1)	12/16/2008	200,000	199,423	143,196	143,773	Yes
CB-6	Dragon Run (Calhoun 2)	12/16/2008	95,126	95,126	55,677	55,677	Yes
CB-7	Dragon Run (Calhoun 3)	12/16/2008	12,000	12,000	3,044	3,044	Yes
CB-14	York Complex (Harris Creek site)	12/16/08	5,000	2,500	0	2,500	No
RP-12	Rappahannock River (Norman's Ford)	12/16/2008	150,000	150,000	0	0	Yes
	Total		889,502	770,231	392,816	512,087	

IV. Mitigation Overview

The Fund is dedicated to providing the greatest compensatory mitigation value, while placing a specific emphasis on the protection of Virginia's rare plants, animals, and natural communities. As per the MOU, a primary goal of the Fund is to ensure a "no net loss" of acreage, functions, and values for compensatory mitigation completed for impacts to aquatic resources of the same type and within the same watershed as the impacts. The following sections detail the methodologies used by the Fund to help achieve these program goals.

Mitigation Value for Projects

The goal of no net loss of wetland acreage and function is defined in federal and state regulations. Activities which can be credited as wetland mitigation include wetland creation, restoration, enhancement, and preservation. In addition, the restoration, enhancement, or preservation of upland areas adjacent to wetland systems is also credited as wetland mitigation.

To determine and track the progress of the Fund toward the no net loss goal, information about impacts and mitigation is required. The Fund uses wetland impact area (acres) to determine the minimum requirement of wetland replacement necessary for each basin. Wetland replacement is achieved through wetland restoration or creation such that wetland acreage is gained to offset losses, consistent with state and federal laws. To address functional losses, ratios are applied to wetland impacts. The following impact to compensation ratios are applied to acres of wetland impacts in order to calculate the mitigation liability for each basin: PFO – 2:1, PSS – 1.5:1, PEM – 1:1, POW – 1:1, E1/2EM – 1: 1. It is generally accepted that higher ratios for wetland types that take longer to establish (e.g. forested wetlands) are necessary. To meet or exceed the mitigation liability in a basin, the Fund may pursue other activities in addition to restoration and creation.

In 2006, the Corps, FWS, and DEQ agreed that the standard ratios included in Table 33 may typically be used for crediting the Fund's wetland mitigation projects. These standard ratios were used to update the information provided for each wetland mitigation project in Section V of this report. For certain projects under specific conditions, different ratios may be appropriate. In these cases, the proposed ratio is coordinated for acceptance by the regulatory agencies.

Table 33: Standard Wetland Compensation Acres to Compensation Credit Ratios Used by the Fund

Proposed Mitigation Activity	Ratio
Wetland Restoration	1 : 1
Wetland Creation	1 : 1
Wetland Enhancement - Ratio ranges depending upon amount of enhancement.	3 : 1 to 5 : 1
Wetland Preservation	10 : 1
Upland Buffer Restoration	15 : 1
Upland Preservation - Ratio may be higher depending upon condition, location, or other factors.	20 : 1

Until implementation of the Unified Stream Methodology (USM), standard compensatory mitigation ratios had not been defined for stream impacts and mitigation in Virginia. Examples of accepted activities which can be considered stream mitigation include restoration (activities to

restore proper dimension, pattern, and profile), enhancement (e.g., creation of bankfull benches, bank shaping/sloping, installation of in-stream structures, planting of live-stakes), riparian buffer planting (for this report, includes the area within the first 200 feet from the top of the bank), livestock exclusion, and channel and upland riparian buffer preservation.

Due to the lack of a standard crediting method prior to mid-2007, the programmatic goal was to complete a combination of stream restoration, enhancement, and preservation projects with significant ecological benefit. Unlike with the wetland projects, “crediting” of stream projects is not completed for the Fund until projects are funded by impacts paid through the USM. Therefore, for this and previous annual reports, the mitigation activities for each stream project are described with the associated linear footage and protected riparian buffer widths. Projects funded by impacts paid through the USM will be reported and credited accordingly.

For both wetland and stream projects, only those areas protected in accordance with the MOU are considered for mitigation. These are typically confined to ecologically important aquatic resources and buffers on the site in which activities incompatible with mitigation have been prohibited. The Conservancy refers to this “no-touch” protected area as the mitigation area.

In addition to the typical activities (noted above) which are considered mitigation for wetland and stream impacts, the Fund has pursued unique projects aimed at improving water quality and/or providing additional ecological benefits. These distinctive projects include the re-establishment of oyster reefs and submerged aquatic vegetation beds, and the removal of earthen dams and the installation of a fish passage structure to allow the migration of anadromous fishes. While these projects may not be considered typical mitigation for wetland and stream impacts, their role in the improvement of water quality and benefit to fish and wildlife has been deemed appropriate for funding through the Fund. These projects are credited at a higher ratio, which reduces the amount of mitigation credit when compared to typical restoration projects.

Mitigation Project Site Selection

The following factors are considered during the identification and review of a project proposed for funding through the Fund.

- Appropriateness of the site to provide mitigation for permitted impacts
- Mitigation need for a project based on major river basin
- Likelihood of long-term success of the project
- Proximity of the site to identified areas of concern, environmentally sensitive sites, or other protected sites
- Project cost versus the mitigation value of the project

A proposed project must comply with the program goal to improve and protect water quality and provide appropriate and practicable mitigation for permitted impacts. As detailed in Section II, permitted impacts, the associated mitigation payments, and mitigation projects are tracked and reported by major river basin on an annual basis. This tracking process is in accordance with the Virginia Water Protection Permit Regulation (9VAC 25-210-115 E), which defines the criteria for DEQ’s in-lieu fee fund approval. As previously stated, the primary goal of the Fund is to meet mitigation needs on a major river basin basis. Although not required, a secondary goal of the Fund is to mitigate for permitted impacts through projects in the same or adjacent HUC. However, this goal is often cost prohibitive for the Fund based on limited impacts and associated mitigation payments in certain areas.

In addition to providing the appropriate mitigation, the program also considers the long-term

success and ecological benefits of each project. The Conservancy is a leading international, non-profit organization with the mission of preserving the plants, animals, and natural communities that represent the diversity of life on Earth. To achieve this mission, the Conservancy has developed a strategic, science-based planning process, called Conservation by Design, which helps the organization identify the highest-priority areas that, if protected, will secure biodiversity over the long term. The Conservancy uses this tool to help identify preferred areas to search for a potential mitigation site within each major river basin.

Conservation by Design entails a four-step, disciplined process that enables the Conservancy to develop the appropriate mix of actions to abate threats in a given place and to secure tangible, lasting conservation results. A detailed description of Conservancy by Design can be found at the Conservancy's website (www.nature.org).

As the first step in Conservation by Design, the Conservancy sets its conservation priorities for a specific, scientifically-selected geographic location, called an ecoregion. Ecoregions represent the full distribution and diversity of native species, natural communities, and ecosystems. In order to make the most effective progress toward the conservation goals, the Conservancy establishes priority conservation areas within these ecoregions.

These priority areas are those places that are most in need of conservation action or provide the best opportunity for investment in conservation efforts. The design of ecoregion-based priority areas is accomplished through a careful review of the ecoregions' ecological significance, its concentration of different species, the overall quality of the natural communities, and threats to the health of the area. This collected data allows the Conservancy to identify and prioritize which sites in the ecoregion are most suitable for protection.

The Conservancy uses Conservation by Design to focus on preferred areas within each major river basin to identify a potential stream or wetland mitigation site. In addition to the long-term protection of a specific plant or animal species or natural community, this approach also develops protection corridors within a landscape of priority conservation areas.

The primary reason for locating the Fund's mitigation projects within this conservation framework is to increase the potential ecological benefits of the mitigation site beyond its own "footprint." An example of the success of using Conservation by Design as a tool in this program is demonstrated in the Chowan River Basin, where the Fund has contributed to the protection and restoration of land within the Back Bay, North Landing River, and Northwest River conservation corridors. These corridors have been recognized by federal, state, local, and environmental organizations as high conservation priorities. The Fund has protected over 1,700 acres of land within these corridors and is actively restoring/enhancing over 200 acres of wetlands. These mitigation projects compliment the tens of thousands of acres that federal, state, local and conservation organizations have protected in these areas using other funds. A map of these conservation corridors is included in Attachment B.

Projects located outside of Conservancy identified priority areas are considered and often proposed in partnership with natural resource partners based on the mitigation needs for the basin, mitigation opportunities at the specific site, ecological benefits provided by the project, and the likelihood of long-term success.

Mitigation Monitoring and Project Success

Monitoring of an approved project is critical to determine the overall success of the project in terms of mitigation. Prior to 2004, monitoring and success criteria were not assigned to several

projects, particularly projects involving stream mitigation or non-typical mitigation. Monitoring and success criteria for stream mitigation were not defined or standardized in Virginia prior to 2004.

Over the past four years, the Fund staff and the Corps have worked to standardize the mitigation plans, including the requirements for monitoring and the success criteria of the proposed projects. The Conservancy prepares a mitigation plan with requirements for monitoring and success for Corps approval for all recently proposed and approved projects.

As stated in the MOU, the Fund is committed to ensuring that the completed projects are successful, and will repair or perform corrective action on projects that are determined to be unsuccessful. To help ensure this commitment, as required by the MOU, all projects proposed since 2003 have 20% of the restoration costs authorized to complete corrective actions if necessary.

Long-Term Protection and Stewardship

In accordance with federal and state requirements, each mitigation project must have a provision for long-term protection of the mitigation area. This provision is most often a conservation easement, deed restriction, dedication as a natural area preserve, or ownership by the Conservancy. Alternative protection methods may be implemented with approval from the Corps. These instruments protect the ecologically important aquatic resources and buffers on the mitigation site through the prohibition of certain activities such as, but not limited to, silviculture, agriculture, and development. The Conservancy refers to this “no-touch” protected area as the mitigation area.

Protective instruments are often placed on entire tracts of land, and not just over the identified mitigation area. Although certain activities outside the mitigation area are restricted by the easement, other activities may be allowed which renders the acres ineligible to serve as mitigation for permitted impacts. While the entire tract may not count as mitigation, its protection improves the overall landscape context of the mitigation site. The Conservancy tracks this additional acreage protected by the easement but located outside of the mitigation area as “additional protected acreage.” The mitigation area acreage and additional protected acreage for each project are detailed in the Project Summaries and tables included in Section V.

Once the mitigation project has been finalized and the land protected, there is a need for a management plan to care for the area over the long term. As part of a project’s proposal, the Conservancy often requests funds for the continual management and stewardship of the site. These funds are held in a stewardship endowment and used to fund ongoing monitoring of the conservation easement or deed restrictions. Project easements are sometimes held by one of the Conservancy’s partners, who are then responsible for the stewardship, and the associated monitoring and reporting, of the site. For these projects, funds may be requested for the stewardship activities conducted by the partner.

Under certain circumstances, the Conservancy initially purchases the property and then transfers the parcel or sections of the parcel to another entity, such as a government organization, a local land trust, or a conservation buyer. All properties are transferred with legally binding restrictions, as described above, which limit certain land practices and uses, to ensure ultimate protection of the mitigation area. Each entity must be committed to protecting the property’s important natural values and willing to ensure the lands’ long-term conservation and protection. The proceeds from these land sales are returned to the program and used to accomplish additional mitigation projects.

The Corps reviews the proposed protective instrument for each project and has the final authorization on the appropriateness of the proposed form of protection, as well as the content of each protective instrument. Details regarding the long-term protection and stewardship for each mitigation project are included under the Project Summaries in Section V.

Partners

Partnerships are often instrumental for ensuring the success of each mitigation project and advancing the goals of the program. The Conservancy has partnered with various federal, state, and local government groups, as well as private non-profit and for profit organizations to offer a variety of mitigation opportunities, site locations, and aquatic resource benefits. Conservancy policy requires that each partner organization be evaluated to ensure that it is in good financial standing and has the staffing capacity to carry out the project.

The Conservancy has worked collaboratively with numerous partners in many different capacities including potential site or project identification, land acquisition and ownership, long-term protection and stewardship, and project implementation. This collaboration has allowed the program to utilize the expertise, innovation, and local knowledge of partners to promote land acquisition and protection, as well as provide creative solutions to complex mitigation issues and concerns.

Several of the mitigation projects are part of a larger land protection or restoration opportunity sponsored by numerous partners. It is important to note that the Fund claims only the mitigation opportunities on the acreage directly funded through the program, and not the additional acreage acquired or accomplished by the partners.

The landowner is one of the most important partners to ensure the success of a mitigation project. Landowners for current projects include federal, state, and local governments, non-profit organizations, and private citizens. These landowners are dedicated to the conservation of the resources and are often interested in showcasing the mitigation activities to other landowners, while setting a precedent within the conservation area.

Table 34 contains a sample of the groups with which the Conservancy has partnered to achieve the mitigation projects included in this report. The diversity and expertise of these partners is a critical component to the success of the individual mitigation projects, as well as the success of the program.

Table 34. VARTF Partner Organizations

Bedford County	Northern Virginia Conservation Trust
Canaan Valley Institute	Northern Virginia Soil and Water Conservation District
Cave Conservancy of the Virginias	Old Dominion University
Central Virginia Battlefields Trust	Orange County
Chesapeake Bay Foundation	Rappahannock Phragmites Action Committee
Christopher Newport University	Rivanna Sewer and Water Authority
City of Bedford	Spotsylvania County
City of Charlottesville	Stafford County
City of Fredericksburg	Trust for Public Land
City of Harrisonburg	United States Army Corps of Engineers

Culpeper County	United States Environmental Protection Agency
Ducks Unlimited	United States Fish and Wildlife Service
Fairfax County	Valley Conservation Council
Fauquier County	Various Consulting and Engineering Firms
Friends of the Rappahannock	Various Individual Landowners
Goose Creek Association	Virginia Commonwealth University
Henrico County	Virginia Department of Conservation and Recreation
James City County	Virginia Department of Environmental Quality
James River Association	Virginia Department of Forestry
Loudoun County	Virginia Department of Game and Inland Fisheries
Middle Peninsula Land Trust	Virginia Institute of Marine Science
Middle Peninsula Public Access Authority	Virginia Marine Resources Commission
National Park Service	Virginia Outdoors Foundation
Natural Resources Conservation Services	Virginia Tech
New River Land Trust	Western Virginia Land Trust

Details regarding partnering opportunities for each mitigation project are included under the Project Summaries in Section V.

Additional Program Benefits

In addition to the direct mitigation of surface water impacts, the Fund provides significant supplementary benefits to Virginia's resources. Many of these additional benefits are made possible through the site identification process and partnering opportunities outlined above.

Through Conservation by Design, mitigation sites are often located within a conservation framework that provides greater ecological benefit than would an isolated project with the same mitigation activities. The projects are often part of an on-going conservation initiative with comprehensive ecological management plans. The large size of many of the projects (including both the mitigation areas and additional protected acreage) provides significant habitat for wildlife that depend upon large, contiguous forest blocks, while also providing additional buffering protection for aquatic resources. These projects often provide corridors to connect preserved properties or surround and buffer a critical area. Many of the projects are listed habitat sites for state and/or federal threatened or endangered species and natural communities, and have documented occurrences of the Virginia Department of Conservation and Recreation Natural Heritage Elements. In addition, many of the projects provide direct and indirect improvements to impaired systems, such as TMDL listed streams, or added protection to large or significant resource systems, including the Clinch River, Great Dismal Swamp, and the Chesapeake Bay watershed. Several sites also have significant historic or cultural resource preservation benefits or protect unique natural features.

Table 35 is a compiled listing of the rare species, natural communities, and unique natural features that could potentially benefit from the approved mitigation projects of the Fund, through water quality improvement, habitat protection, feeding and nursery habitat protection, and direct enhancement or restoration of the resource. This list was developed utilizing existing conservation planning information, as well as other data.

Table 35: Conservation Targets

Common Name / Community	Scientific Name	Federal/State Rankings
Virginia stonefly	<i>Acroneuria kosztarabi</i>	G1/S1
northern saw-whet owl	<i>Aegolius acadicus</i>	G5/S1B,S1N
sensitive joint vetch	<i>Aeschynomone virginica</i>	G2/S2
dwarf wedgemussel	<i>Alasmidonta heterodon</i>	G1,G2/S1
elktoe	<i>Alasmidonta marginata</i>	G4/S1,S2
pearly everlasting	<i>Anaphalis margaritacea</i>	G5/S1
Elliott's aster	<i>Aster puniceus elliotii</i>	G5T34/S1
tropical water-hyssop	<i>Bacopa innominata</i>	G3,G5/S2
upland sandpiper	<i>Bartramia longicauda</i>	G5/S1B
aster-like boltonia	<i>Boltonia asteroides</i>	G5/S3
Carolina boltonia	<i>Boltonia caroliniana</i>	G4/S2
Carolina fanwort	<i>Cabomba caroliniana</i>	G3G5/S1
Price's cave isopod	<i>Caecidotea pricei</i>	G3G4/S2S3
hoary elfin	<i>Callophrys polios</i>	S1S3
mountain bittercress	<i>Cardamine clematitis</i>	G2G3
epiphytic sedge	<i>Carex decomposita</i>	G3/S2
a sedge	<i>Carex striata</i>	G4/S2
purple finch	<i>Carpodacus purpureus</i>	G5/S1B,S5N
hermit thrush	<i>Catharus guttatus</i>	G5/S1B,S5N
Atlantic white cedar	<i>Chamaecyparis thyoides</i>	G4/S2
northeastern beach tiger beetle	<i>Cicindela dorsalis ssp. dorsalis</i>	Threatened
northern harrier	<i>Circus cyaneus</i>	G5/S1S2B,S3N
sawgrass	<i>Cladium mariscus var. jamaicense</i>	G5T5/S1
spreading pogonia	<i>Cleistes divaricata</i>	G4/S1
bunchberry	<i>Cornus Canadensis</i>	G5/S1
Virginia big-eared bat	<i>Corynorhinus townsendii virginianus</i>	G4T2/S1
Potomac sculpin	<i>Cottus bairdi</i>	Potomac and James restricted
timber rattlesnake	<i>Crotalus horridus</i>	G4TUQ/S1
canebroke rattlesnake (coastal plain population)	<i>Crotalus horridus</i>	G4TUQ/S1
eastern hellbender	<i>Cryptobranchus alleganiensis</i>	G3G4/ S2S3
spectaclecase	<i>Cumberlandia monodonta</i>	G3/S1
button-bush dodder	<i>Cuscuta cephalanthi</i>	G5/S1
pretty dodder	<i>Cuscuta indecora</i>	G5/S2
steelcolor shiner	<i>Cyprinella whipplei</i>	G5/S1
showy lady's slipper	<i>Cypripedium reginae</i>	G4/S1
magnolia warbler	<i>Dendroica magnolia</i>	G5/S2B
showy tick-trefoil	<i>Desmodium canadense</i>	G5/S1S2
beaked spikerush	<i>Eleocharis rostellata</i>	G5/S3
yellow lance	<i>Elliptio lanceolata</i>	G2G3/S2S3
alder flycatcher	<i>Empidonax alnorum</i>	G5/S1B
big bluet	<i>Enallagma durum</i>	G5/S3
oyster mussel	<i>Epioblasma capsaeformis</i>	G1/S1
Parker's pipewort	<i>Eriocaulon parkeri</i>	G3/S2
bluebreast darter	<i>Etheostoma camurum</i>	G4/S2
ashy darter	<i>Etheostoma cinereum</i>	G2G3/S1
longfin darter	<i>Etheostoma longimanum</i>	James River endemic

Common Name / Community	Scientific Name	Federal/State Rankings
riverweed darter	<i>Etheostoma podostemone</i>	G4
wounded darter	<i>Etheostoma vulneratum</i>	G3/S2S3
scarce swamp skipper	<i>Euphyes dukesi</i>	G3/S2
American peregrine falcon	<i>Falco peregrinus anatum</i>	State threatened, DM
Appalachian springsnail	<i>Fontigens bottimeri</i>	G2/S1S2/SE
Tennessee pigtoe	<i>Fusconaia barnesiana</i>	G2G3/S2S3
shiny pigtoe	<i>Fusconaia cor</i>	G1/S1
fine-rayed pigtoe	<i>Fusconaia cuneolus</i>	G1/S1
finerayed pigtoe	<i>Fusconaia cuneolus</i>	G1/S1
Atlantic pigtoe	<i>Fusconaia masoni</i>	G2/S2
wood turtle	<i>Glyptemys insculpta</i>	G4/S2
American bald eagle	<i>Haliaeetus leucocephalus</i>	G5/S2S3
cracking pearlymussel	<i>Hemistena lata</i>	G1/S1
fox-tail barley	<i>Hordeum jubatum</i>	G1/S1
Roanoke hogsucker	<i>Hypentelium roanokense</i>	G5
mountain brook lamprey	<i>Ichthyomyzon greeleyi</i>	G3,G4/S2
spiny riversnail	<i>Io fluvialis</i>	G2/S2
small whorled pogonia	<i>Isotria medeoloides</i>	G2/S2
least bittern	<i>Ixobrychus exilis</i>	G5/S2
jointed rush	<i>Juncus articulatus</i>	G5/S2
narrow-panicked rush	<i>Juncus brevicaudatus</i>	G5/S2
big-head rush	<i>Juncus megacephalus</i>	G4G5/S2
sheep-laurel	<i>Kalmia angustifolia</i>	G5/S3
eastern lampmussel	<i>Lampsilis radiata</i>	G5/S2S3
loggerhead shrike	<i>Lanius ludovicianus</i>	G4/S2B,S3N
Tennessee heelsplitter	<i>Lasmigona holstonia</i>	G3/S1
green floater	<i>Lasmigona subviridis</i>	G3/S2
birdwing pearly mussel	<i>Lemiox rimosus</i>	G1/S1
Kemp's Ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered
fragile papershell	<i>Leptodea fragilis</i>	G5/S1
onyx rocksnail	<i>Leptoxis praerosa</i>	G5/S1,S3
slabside pearl mussel	<i>Lexingtonia dolabelloides</i>	G2/S2
Virginia pigtoe	<i>Lexingtonia subplana</i>	G1/S1
black sandshell	<i>Ligumia recta</i>	G5/S2
Carolina lilaepsis	<i>Lilaeopsis carolinensis</i>	G3/S1,S2
Swainson's warbler	<i>Limnothlypis swainsonii</i>	G4/S2B,S3N
elongated lobelia	<i>Lobelia elongata</i>	G4,G5/S1
winged seedbox	<i>Ludwigia alata</i>	G3G4/S1
river redhorse	<i>Moxostoma carinatum</i>	G4/S2S3
eastern small-footed myotis	<i>Myotis leibii</i>	G3/S1
popeye shiner	<i>Notropis ariommus</i>	G3/S2S3
emerald shiner	<i>Notropis atherinoides</i>	G5/S1S2
roughhead shiner	<i>Notropis semperasper</i>	James River endemic
mirror shiner	<i>Notropis spectrunculus</i>	G4/S2
yellowfin madtom	<i>Noturus flavipinnis</i>	G1/S1
stonecat	<i>Noturus flavus</i>	G5/S2
orange fin madtom	<i>Noturus gilberti</i>	G2

Common Name / Community	Scientific Name	Federal/State Rankings
eastern glass lizard	<i>Ophisaurus ventralis</i>	G5/S1
large-leaved grass of Parnassus	<i>Parnassia grandifolia</i>	G3G4/S2
joint paspalum	<i>Paspalum distichum</i>	G5/S1
blotchside logperch	<i>Percina burtoni</i>	G2G3/S1
channel darter	<i>Percina copelandi</i>	G4/S2
longhead darter	<i>Percina macrocephala</i>	G3/S1S2
stripeback darter	<i>Percina notogramma</i>	James River endemic
Roanoke logperch	<i>Percina rex</i>	G1, G2, LE
caddisfly	<i>Phylocentropus carolinus</i>	G5
slender-leaved dragon-head	<i>Physostegia leptophylla</i>	G4G5/S2
Peaks of Otter salamander	<i>Plethodon hubrichti</i>	G2/S2
James River spiny mussel	<i>Pleurobema collina</i>	G1
Tennessee clubshell	<i>Pleurobema oviforme</i>	G2G3/S2S3
pyramid pigtoe	<i>Pleurobema rubrum</i>	G2G3/S1
rare skipper	<i>Problema bulenta</i>	G2G3/S1 SOC
thin-necked cave beetle	<i>Pseudanophthalmus parvicollis</i>	G1S1
fluted kidneyshell	<i>Ptychobranchus subtentum</i>	G2/S2
rough rabbits foot	<i>Quadrula cylindrica</i>	G3T2/S2
Appalachian monkeyface	<i>Quadrula sparsa</i>	G1/S1
goldencrowned kinglet	<i>Regulus satrapa</i>	G5/S2B,S5N
alderleaf buckthorn	<i>Rhamnus alnifolia</i>	G5/S1
capillary beakrush	<i>Rhynchospora capillacea</i>	G5/S1S2
bigeye jumprock	<i>Scartomyzon ariomus</i>	G4
purple oat-grass	<i>Schizachne purpurascens</i>	G5S1
hard-stemmed bulrush	<i>Scirpus acutus</i>	G5/S1
redbreasted nuthatch	<i>Sitta canadensis</i>	G5/S2B,S4N
roundleaf clover	<i>Solidago patula</i>	G5/S1
Dismal Swamp southeastern shrew	<i>Sorex longirostris fisheri</i>	G5T2/S2
yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	G5/S1B,S4N
sweetscent ladies'-tresses	<i>Spiranthes odorata</i>	G5/S3
Caspian tern	<i>Sterna caspia</i>	G5/S1B,S2N
silky camellia	<i>Stewartia malachodendron</i>	G4/S2
Bigger's Cave amphipod	<i>Stygobromus biggersi</i>	G2G4/S1S2
Shenandoah Valley cave amphipod	<i>Stygobromus gracilipes</i>	G3G4/S2S3
Bewick's wren	<i>Thryomanes bewickii</i>	G5T2Q/S1B
Spanish moss	<i>Tillandsia usneoides</i>	G5/S1
purple lilliput	<i>Toxolasma lividus</i>	G2/S1
Fraser's marsh St. John's-wort	<i>Triadenum fraseri</i>	G5/S1
least trillium	<i>Trillium pusillum</i> var. <i>virginianum</i>	G3T3/S2
winter wren	<i>Troglodytes troglodytes</i>	G5/S2B,S4N
American black bears	<i>Ursus americanus</i>	Threatened
large cranberry	<i>Vaccinium macrocarpon</i>	G4/S2
purple bean	<i>Villosa perpurpurea</i>	G1/S1
loblolly pine savanna natural community		
non-riverine saturated forest community		
Appalachian terrestrial dung community		
Appalachian cave drip pool/epikarstic community		

Common Name / Community	Scientific Name	Federal/State Rankings
Appalachian cave stream community		
Appalachian cave stream riparian community		
oligotrophic saturated scrub community		
Atlantic white cedar swamp community		
brackish marsh community		
pocosin community		
spruce/fir forest		
high elevation cove forest		
Terrestrial Community mountain/piedmont acidic seepage swamp		

As one of the largest international conservation organizations, the Conservancy is recognized for its expertise in land protection. Because of this, many land owners are often willing to either donate an easement on their entire property or sell the land or easement below fair market value. The savings in acquisition and protection costs allow the Fund to use those otherwise required costs to fund additional mitigation projects.

Although the program does not fund academic research, many of the project sites are available for scientific studies provided there is no interference with the mitigation efforts. Virginia Tech conducted research on the effects of vegetation cover types on soil temperature in relation to growing season at a southeast Virginia site. Old Dominion University conducted a small mammal study at three project sites in the Chowan River Basin. Christopher Newport University utilized monitoring data to generate papers and presentations on numerous restoration-related subjects, including the effect of volunteer colonization by woody species on growth and survival of planted species, the role of site selection and goal setting in restoration of prior converted wetlands, the creation of a GIS-based predictive model for colonization of woody species in restored and created wetlands, and a comparison of the use of a prevalence index and the 50/20 Rule for hydrophytic vegetation community monitoring, including the effect of graminoid species on monitoring outcomes.

Project sites have also been used as training opportunities for various federal and state government programs. The Conservancy has organized field trips for interested federal, state, and local government representatives, private landowners and home owner organizations, watershed protection groups, school groups, youth service programs, and non-profit organizations. These trips have provided significant educational opportunities for both conservation and stream and wetland mitigation activities. For example, the Conservancy has led field trips to the Rivanna River (Lamb - MJ-1) project as part of the 2005 Virginia Stream Alliance Workshop, as well as individual site visits with local government representatives, local landowners, youth service organizations, and school groups. In addition, one large wetland restoration and preservation site in the Chesapeake area was used in 2008 as part of wetland delineation and regional supplement training for Army Corps of Engineers personnel.

The Conservancy has enlisted the help of numerous volunteers to assist the program-funded staff in accomplishing activities both in the field and in the office. The volunteers have assisted program staff by reviewing and updating various program tracking records, conducting invasive species control activities, planting riparian buffers, assisting with preserve cleanup, and providing visual monitoring of the sites. This involvement furthers the public's understanding of mitigation and the importance of healthy streams and wetlands.

V. Mitigation Projects

This section provides general information regarding the mitigation projects proposed by the Conservancy and approved or denied by the Corps. Detailed project summaries of the approved projects are included in Attachment C.

Approved Mitigation Projects

From 1995 through 2008, the Corps has authorized \$35,948,580.65 for the Conservancy and our partners to pursue a total of 101 mitigation projects. These projects attempt to achieve the overall programmatic goal of water quality improvement through the creation, restoration, and enhancement of non-tidal and tidal wetlands and through the restoration and enhancement of stream channels. Water quality is further enhanced by the Fund through the restoration or enhancement of the surrounding upland buffers. The Fund has also achieved the preservation of highly functional wetlands, streams, and buffer areas which improve and protect water quality in the long-term. In addition to funding the direct costs of wetland and stream restoration, enhancement, creation, or preservation, money was also requested and authorized to fund a variety of associated or preliminary activities including land acquisition, property appraisals, boundary surveys, stewardship activities, feasibility studies, and conceptual plan development.

A summary table listing all of the projects for which funds have been authorized through 2008 is included in Attachment A. The table includes the project name and corresponding identification number (based on major river basin), project location information (HUC), aquatic resource type for which the project provides mitigation (non-tidal wetlands, tidal wetlands, streams), proposal information (purpose of the request for funding, date proposed by the Conservancy, date the funds were authorized by the Corps), and the amount of funds authorized by the Corps based on resource type. The projects are organized by major river basin, and within each basin, listed chronologically based on the Corps funding approval date. Several project names are withheld as a privacy consideration for landowners whose protection instrument has not been finalized at this time. These projects are identified throughout the report according to the project identification number and the general location or watershed of the project.

Due to drainage divides or hydrological modifications at the site, four projects (CB-5/CH-12, CB-8/YK-4, CH-9/LJ-4, and SH-3/UJ-3) mitigate for impacts within multiple basins. Although these projects are listed in the table in Attachment A under both basins, the total funds authorized by the Corps for these projects have been appropriately divided between the two respective basins.

Table 36 illustrates the number of mitigation projects approved by the Corps each year since the initiation of the Fund. Only the initial project approval is included in the table. Subsequent approvals for the same project are not recorded as approved projects in the subsequent year.

Table 36: Annual Number of Approved Projects.

Year	Number of Approved Projects	
	Number	Cumulative Total
1995	1	1
1996	0	1
1997	4	5
1998	2	7
1999	1	8
2000	3	11
2001	5	16
2002	5	21
2003	5	26
2004	5	31
2005	12	43
2006	22	65
2007	16	81
2008	20	101

As stated in the original MOU, the Conservancy initially proposed projects located primarily along the North Landing River and Northwest River within the Chowan River Basin. As the geographic range and amount of mitigation payments received by the Fund increased, the need for compensatory mitigation projects in additional areas became necessary. In recent years, the Conservancy has proposed a diversity of projects across the state in all major river basins with the exception of the New River Basin and the Big Sandy River Basin. Until 2005 the Fund was not used as a mitigation option for impacts within these two basins; therefore, the Conservancy did not focus on identifying mitigation projects in these areas. Many of the proposed projects across the state include both wetland and stream components and a suite of creation, restoration, enhancement, and preservation activities. A map depicting the location of these sites across the state is included in Attachment B.

Of the 101 approved projects, 65 projects include mitigation activities to address non-tidal wetland impacts; 13 projects include mitigation activities to address tidal wetland impacts; and 50 projects include mitigation activities to address stream impacts. Twenty-six of the approved projects include mitigation activities to address impacts to multiple aquatic resource types. Of the 101 approved mitigation projects, the Conservancy is actively developing or completing 92 projects. The Conservancy is no longer pursuing the remaining projects due to irresolvable landowner constraints or based on the recommendations of feasibility studies.

Table 37 provides an annual summary and cumulative total of funds authorized by the Corps through 2008 based on aquatic resource type. As noted in the table and detailed in Section III, the Fund has shown continued progress in the approval of mitigation projects in 2008.

Table 37: Annual Authorized Funds Per Resource Type.

Year	Funds Authorized				
	Non-Tidal Wetland Projects (\$)	Tidal Wetland Projects (\$)	Stream Projects (\$)	Total (\$)	Cumulative Total (\$)
1995	37,020	0	0	37,020	37,020
1996	0	0	0	0	37,020
1997	167,076	10,000	7,000	184,076	221,097
1998	340,015	0	0	340,015	561,111
1999	143,204	0	0	143,204	704,315
2000	521,315	1,736	0	523,051	1,227,366
2001	936,680	10,000	15,000	961,680	2,189,046
2002	1,250,000	90,650	101,594	1,442,244	3,631,290
2003	510,841	40,000	1,545,800	2,096,641	5,727,931
2004	1,366,250	25,333	137,600	1,529,183	7,257,114
2005	206,888	206,350	474,013	887,251	8,144,365
2006	2,522,833	9,000	6,334,251	8,866,084	17,010,449
2007	1,130,381	6,250	6,546,053	7,682,684	24,693,133
2008	4,322,578	135,372	6,797,498	11,255,448	35,948,581
Grand Totals	13,455,081	534,691	21,958,809	35,948,581	

Table 38 summarizes the funds authorized by the Corps according to resource type and major river basin. All major river basins in Virginia have had funds authorized for mitigation projects except for the Big Sandy and New River basins. As detailed in Section III, until 2005 the Fund has not been used as a mitigation option in these basins. Those basins with the highest amount of funds authorized have an excess of \$3 million each, and include the Lower James River, Middle James River, Potomac River, Rappahannock River, and Shenandoah River basins. Several basins, including the Chesapeake Bay, Chowan River, and York River basins, have over \$1 million authorized towards mitigation projects.

Table 38: Authorized Funds Per Resource Type and Basin through 2008.

Basin	Funds Authorized			
	Non-Tidal Wetland Projects (\$)	Tidal Wetland Projects (\$)	Stream Projects (\$)	Total (\$)
Atlantic Ocean	0	256,350	0	256,350
Chesapeake Bay	1,534,319	88,024	136,176	1,758,518
Chowan	2,617,725	52,666	77,150	2,747,541
Lower James	3,401,116	88,650	1,584,282	5,074,048
Middle James	493,200	0	4,587,105	5,080,305
Upper James	127,999	0	149,009	277,008
Potomac	1,235,820	38,000	8,012,255	9,286,074
Rappahannock	1,745,936	10,000	2,576,651	4,332,587
Roanoke	251,575	0	728,825	980,400
Shenandoah	535,836	0	3,387,284	3,923,120
Tennessee	85,000	0	358,090	443,090
York	1,426,557	1,000	361,982	1,789,539
Totals	13,455,081	534,691	21,958,809	35,948,581

Expenditures from the Fund follow the progress of each mitigation project. Some of these projects are completed quickly, as in the scenario of preservation projects. However, many of these projects involve restoration and monitoring which occur over a number of years. The majority of restoration projects funded are proposed to have monitoring for up to ten years following completion of restoration activities and the planning period may take several years. Table 39 provides information about the payments from the Fund to complete the mitigation activities approved by the Corps on an annual basis.

Table 39: Summary of Yearly Expenditures.

Year	Expenditures (\$)
1995	16
1996	37,442
1997	173,692
1998	320,596
1999	40,180
2000	824,016
2001	681,947
2002	1,184,821
2003	551,379
2004	1,239,881
2005	1,110,749
2006	2,615,709
2007	5,991,699
2008	5,939,935
Total	20,712,062

These approved projects are in various stages of completion (Table 40). For example, as detailed in Section III, a significant number of projects were approved through 2006 - 2008. Many of these projects are pending the closure of land acquisitions or easements, require delineations or surface water assessments, or are in the initial planning stages for restoration or enhancement activities. In addition to the recently approved projects, several of the older projects are pending official closure with approval from the Corps. Therefore, acreages, linear footages and funding values included in this report are often estimates and may require clarification in future reports. Once a project is officially closed, the Conservancy will report the final mitigation provided by that project and the total funds authorized for that project in the subsequent annual report.

Table 40: Status of Approved Projects.

Project status	Non-tidal Wetland	Tidal Wetland	Stream	Multiple Resource	Total Number
Active project development	4		13	6	23
Acquired/Protected	10	1	5	8	24
Construction Planned 2009	2		1	1	4
Constructed/Monitoring	13	3	2	3	21
Closed/Mitigation	6	3	6	2	17
Closed without mitigation	3	1	2	3	9
Inactive, pending closure	2		1		3
Total	40	8	30	23	101
Active project development – currently in negotiations with landowner and/or developing restoration plans. Acquired/Protected – preservation only projects with land protection deal completed; delineation required to close. Construction 2009 – restoration plans complete or underway for 2009 implementation of mitigation activities. Constructed/Monitoring – restoration activities are complete, project in monitoring phase (up to 10 years) Closed/Mitigation – project has been officially closed and mitigation credit assigned. Closed w/o Mitigation – project has been officially closed and did not provide any mitigation credit (appraisal, feasibility, project withdrawn). Inactive – project is no longer moving forward and will be closed w/o credit					

Approved Project Details

Non-Tidal Wetland Summary

Tables 41, 42 and 43 provide summary information of Fund activity relating to non-tidal wetlands from 1995 through 2008. Table 41 details the total impacts (acres), mitigation payments, authorized funds, the remaining balance of available funds, and the mitigation liability (credits). Table 42 summarizes the mitigation activities being pursued (acres), and the associated proposed credits for non-tidal wetlands on a programmatic basis. Table 43 provides a summary of the non-tidal wetland impacts (acres), the associated credit liability, the proposed wetland mitigation credits, the mitigation acres, and additional protected acres for each major river basin.

Table 41: Non-Tidal Wetland Impact and Financial Summary.

Impacts (Acres)	Mitigation Payments (\$)	Authorized Funds (\$)	Remaining Balance (\$)	Mitigation Liability (Credits)
238.74	20,151,802	13,455,082	6,696,720	429.14

Table 42: Non-Tidal Wetland Mitigation Activity Summary.

Non-Tidal Wetland Mitigation Activities (Acres)					Sum of Mitigation Acres	Sum of Mitigation Credits
Wetland Restoration	Wetland Enhancement	Wetlands Preservation	Upland Restoration	Upland Preservation		
608.7	34.25	3,769.80	235.55	1,263.94	5,848.11	1,060.79

Table 43: Non-Tidal Mitigation Summary Based on Major River Basin.

Basin	Impacts (Acres)	Mitigation Liability (Credits)	Proposed Mitigation (Credits)	Mitigation Successful or Constructed (Credits)	Credit Balance (Credits)	Proposed Mitigation (Acres)	Additional Protected Acreage
Atlantic Ocean	0.62	1.21	0.00	0	-1.21	0.00	0.00
Big Sandy	0.11	0.15	0.00	0	-0.15	0.00	0.00
Chesapeake Bay	44.46	84.09	130.46	116.46	46.37	1,062.82	301.64
Chowan River	41.54	76.13	381.06	352.71	304.93	1,776.72	149.3
Lower James River	70.32	132.69	253.89	167.15	121.2	1,174.28	739
Middle James River	20.05	37.00	25.96	25.96	-11.04	94.50	513.32
Upper James River	3.10	5.08	4.21	4.21	-0.87	13.99	0.00
New River	1.02	1.06	0.00	0	-1.06	0.00	0.00
Potomac River	7.86	12.39	72.92	65.78	60.53	812.26	0.00
Rappahannock River	10.21	18.98	66.72	14.75	47.74	197.76	443.6
Roanoke River	4.02	6.97	6.24	0	-0.73	33	0.00
Shenandoah River	8.07	9.51	11.7	1.10	-2.19	29	0.00
Tennessee River	18.29	26.65	4.83	1.44	-21.82	29.22	0.00
York River	9.07	17.24	96.57	91.07	79.33	427.36	58.32
Total	238.74	429.15	1,054.2	840.6	625.05	5650.9	2205.2

Tidal Wetland Summary

Tables 44, 45 and 46 provide summary information of Fund activity relating to tidal wetlands from 1995 through 2008. Table 44 contains the total impacts (acres), mitigation payments, authorized funds, the remaining balance of available funds, and the mitigation liability (credits). Table 45 details the mitigation activities being pursued (acres), and the associated proposed credits for tidal wetlands on a programmatic basis. Table 46 provides a summary of the tidal wetland impacts (acres), the associated credit liability, the proposed wetland mitigation credits, the mitigation acres, and additional protected acres for each major river basin.

Table 44: Tidal Wetland Impact and Financial Summary.

Impacts (Acres)	Mitigation Payments (\$)	Authorized Funds (\$)	Remaining Balance (\$)	Mitigation Liability (Credits)
2.612	628,552	534,691	93,861	2.612

Table 45: Tidal Wetland Mitigation Activity Summary.

Tidal Wetland Mitigation Activities (Acres)					Sum of Mitigation Acres	Sum of Mitigation Credits
Wetland Restoration	SAV Restoration	Oyster Restoration	Tidal Enhancement	Tidal Preservation		
23.4	20.0	3.35	220.00	308.73	617.44	64.37

Table 46: Tidal Mitigation Activity Summary Based on Major River Basin.

Basin	Impacts (Acres)	Mitigation Liability (Credits)	Proposed Mitigation (Credits)	Mitigation Successful or Constructed (Credits)	Credit Balance (Credits)	Proposed Mitigation (Acres)
Atlantic Ocean	1.01	1.01	4.6	3.6	3.05	23.01
Chesapeake Bay	1.06	1.06	13.47	13.47	12.41	228.69
Chowan River	0.01	0.01	1.40	1.4	1.39	70.00
Lower James River	0.43	0.43	20.07	0.34	19.64	20.34
Potomac River	0.11	0.11	9.71	8.96	9.6	117
Rappahannock River	0.00	0.00	1.60	1.6	1.60	80.00
York River	0.00	0.00	3.40	0	3.40	3.40
Total	2.62	2.62	40.78	29.37	51.09	542.44

Stream Summary

Tables 47, 48, 49 and 50 provide summary information of the Fund activities for streams from 1995 through 2008. Table 47 provides a summary of the total linear feet of impacts and associated financial information for streams program wide. Table 48 summarizes the total linear footage of each mitigation activity the Fund is pursuing through the approved projects program wide, with pre-USM activities specified. For a broad overview of the Fund activity, stream mitigation activities are divided into the following four general categories: channel restoration / enhancement (projects may include riparian buffer planting); riparian buffer planting (projects do not have any channel or bank work); livestock exclusion; and stream and/or riparian buffer preservation. Table 49 summarizes the total program-wide impact length, linear footage of each mitigation activity, total channel length in the mitigation area, stream mitigation acreage, and the additional protected acreage for the approved stream projects for each major river basin.

As noted in both Tables 48 and 49, for several projects, multiple mitigation activities are completed along the same channel length. For example, riparian buffer planting and livestock exclusion activities were conducted along the same 2,000 linear foot length of stream channel for the Linden Farm project (RP-2). Table 50 identifies these areas of multiple mitigation activities. Detailed descriptions of the mitigation activities (with associated buffer widths, as appropriate) for each project are included in the project summaries in Attachment C.

Table 47: Stream Impact and Financial Summary.

	Impacts (linear feet)	Mitigation Payments (\$)	Authorized Funds (\$)	Remaining Balance (\$)
Pre-USM	163,428	24,970,392	21,221,171	3,749,221
USM	17,157	7,033,634	737,638	6,295,996
Total	180,585	32,004,026	21,958,809	10,045,217

Table 48: Stream Mitigation Activity Summary.

Stream Mitigation Activity (linear feet)					Total Channel Length in Mitigation Area (linear feet)
	Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation	
Pre-USM	51,309	14,100	23,799	541,826	611,077
USM	985	0	0	44,978	45,963
Total	52,294	14,100	23,799	586,804	657,040
For several projects, multiple mitigation activities are completed along the same channel length (e.g., Riparian Buffer Planting and Livestock Exclusion).					

Table 49: Stream Mitigation Activity Summary Based on Major River Basin.

Basin	Impacts (lf)	Proposed Stream Mitigation Activity (lf)				Total Channel Length in Mitigation Area (lf)	Total Completed Mitigation (lf)*	Stream Mitigation Area (ac)	Additional Protected Acreage
		Channel Restoration / Enhancement (may include buffer planting)	Riparian Buffer Planting (no channel or bank work)	Livestock Exclusion	Stream and/or Riparian Buffer Preservation				
Atlantic Ocean	0	0	0	0	0	0	0	0	0
Big Sandy	3,006	0	0	0	0	0	0	0	0
Chesapeake Bay	1399	0	0	0	11,168	11,168	11,168	41	NTW
Chowan River	1,625	0	0	0	0	4,900	0	16	NTW
Lower James River	22,948	9,071	0	0	9,670	18,741	104	119	NTW
Middle James River	29,312	14,191	6,000	0	49,020	66,711	52,759	666	230
Upper James River	0	0	0	0	7,445	7,445	7,445	104	0
New River	3,078	0	0	0	0	0	0	0	0
Potomac River ¹	76,495	17,527	0	8,477	109,141	128,068	79,445	593	1,670
Rappahannock River ^{1,2}	15,679	0	2,000	7,742	308,197	315,939	312,039	1,314	2,979
Roanoke River	6,442	2,980	800	0	20,708	23,688	6008	163	420
Shenandoah River	13,960	4,745	1,700	0	35,434	41,879	5461	519	1,196
Tennessee River ¹	5,359	1,580	0	7,580	9,393	10,973	10,973	32	304
York River	1,282	2,200	3,600	0	21,728	27,528	978	231	133
Totals	180,585	52,294	14,100	23,799	581,904	657,040	486,380	3,799	6,931
Linear footages and acreages included in this table include estimates which may be changed in future reports, as the projects are in various phases of completion. Mitigation Area refers to linear footage and/or acreage included under a "no-touch" buffer.									
lf - linear feet	ac - acre								
NTW - Additional Protected Acreage is reported under the non-tidal wetland summary 1 - For several projects, multiple mitigation activities are completed along the same channel length (e.g., Riparian Buffer Planting and Livestock Exclusion). 2 - The Rappahannock River Fish Passage project is not included in the table Additional Protected Acreage refers to acreage included under the protective instrument placed on the property by the program which does not qualify for mitigation due to specified allowable activities (e.g., silviculture, agriculture) *Indicates projects that have completed construction or acquisition. Sites may be subject to annual monitoring.									

Tables 50 details mitigation activities funded by revenues accrued under the Unified Stream Methodology. Only the Rappahannock River and Shenandoah River basins have projects funded through USM revenues through 2008.

Table 50: USM Compensation Credit Summary Based on Major River Basin.

Basin	Impacts (lf)	TCR	Proposed Compensation Credit	Total Channel Length in Mitigation Area (lf)	Stream Mitigation Area (ac)	Additional Protected Acreage
Big Sandy	1,034	1,293	N/A	0	0	0
Chowan River	714	813	N/A	0	0	0
Lower James River	2,587	2,792	N/A	0	0	0
Middle James River	577	446	N/A	0	0	0
Potomac River	3,671	3,199	N/A	0	0	0
Rappahannock River	4,908	4,260	8,141.2	43,459	196	0
Roanoke River	1,807	1,381	N/A	0	0	0
Shenandoah River	1,832	1,646	2,256	2,504	14.01	10
Tennessee River	27	0	N/A	0	0	0
Totals	17,157	15,831	10,397.2	45,963	210.01	10

Closed Projects

In 2008, the Conservancy and the Corps officially closed nine projects, and amended the closure of a project closed in 2007 (RP-2). Seven of these projects provided mitigation for non-tidal wetland and/or stream resource impacts. One project (CB-14) was for acquisition-related activities that did not result in a completed mitigation project. One project (CB-12) was closed without completion of mitigation activities and does not serve as mitigation.

Table 51 identifies the closed projects, funds allocated, funds returned upon closure, and purpose of the project. The amount of credits assigned for each project is detailed in the individual project summary, where applicable, in the following sections.

Table 51: Closed Project Summary through 2008.

Project ID	Amount Approved (\$)	Balance Returned (\$)	Purpose of Project
CB-3	200,000	143,773	Mitigation
CB-5/CH-12	105,333	18,949	Mitigation
CB-6	95,126	55,677	Mitigation
CB-7	12,000	3,044	Mitigation
CB-9	6,800	0	Feasibility
CB-12	12,732	12,457	Acquisition
CB-14	5,000	2,500	Appraisal
CH-2	24,324	25	Mitigation
CH-4	8,800	40	Mitigation
LJ-2	15,000	0	Mitigation
LJ-3	50,650	0	Mitigation
LJ-5	3,500	1,000	Appraisal
LJ-6	149,500	93,043	Mitigation
MJ-2	1,500	0	Appraisal
PO-4	8,000	0	Appraisal
RP-1	10,000	0	Mitigation
RP-2	61,894	6,962	Mitigation
RP-3	39,700	0	Mitigation
RP-6	6,500	3,500	Appraisal
RP-12	150,000	0	Mitigation
RO-1	180,000	174,252	Mitigation
RO-2	23,250	20,379	Mitigation
TN-1	7,000	0	Mitigation
TN-3	39,000	1,366	Mitigation
TN-4	6,000	0	Appraisal
UJ-2	149,009	149,009	Mitigation
Total	1,379,618	685,975	

In conclusion, as intended, the mitigation payments for numerous, small impacts have been collectively pooled to provide large scale, ecologically preferable mitigation. As the available balance of the Fund has grown, the ability of the program to pursue mitigation projects has increased. With the addition of program staff in 2005 and 2008, the number of approved projects and the efficiency of completing those projects have increased. At the close of 2008, approximately two-thirds of the accumulated mitigation payments have been authorized to a diverse array of non-tidal wetland, tidal wetland, and stream mitigation projects across Virginia. These projects provide a suite of typical wetland and stream restoration, enhancement, and preservation opportunities, as well as unique projects aimed at improving water quality and/or providing additional ecological benefits.

A detailed summary of each project for which funds have been authorized is included in Appendix C. The mitigation projects are organized by major river basin.

Future Priorities

The Conservancy has identified future priorities for the Fund, including programmatic goals as well as activities associated with individual projects. Programmatic goals include operational activities such as the continued prioritization of project identification in areas with high mitigation need. Because the individual project status and the associated required activity for each project is covered in Section V, this section only discusses the general areas of need for projects such as those pending closure or implementation.

- **Mitigation Rule Changes:** On April 10, 2008, the Corps and the Environmental Protection Agency (EPA) released the final rule on “Compensatory Mitigation for Losses of Aquatic Resources” (Federal Register Vol. 73, No. 70). The final rule issues “regulations governing compensatory mitigation for activities authorized by permits issued by the Department of the Army.” These regulations establish equivalent performance standards for all forms of mitigation, including in-lieu programs. The Fund will need to make many changes to adhere to the guidelines set forth in the new rule. These include assigning advance credits, defining the compensation planning framework and watershed approach used by the Fund, establishing pricing for impacts, and determining credit release for approved projects. The Fund will need to modify the operating agreement to accommodate these changes. Developing these plans and implementing them will be a high priority for the Conservancy/Fund staff and managers in 2009.

Prioritization of efforts to identify and acquire mitigation projects in basins with the greatest compensatory mitigation need is a dynamic process that requires a high degree of coordination. As indicated in Section V, there are several basins in which there is mitigation need across all aquatic resource types.

- **Tennessee River Basin:** While non-tidal wetland mitigation requirements are largely addressed by mitigation projects in certain key basins with the greatest impacts such as the Lower James River, Chowan River and York River, there are several basins in which mitigation projects are needed. In 2008, several projects were approved to address the non-tidal wetland liability in the Rappahannock River (RP-11, RP-12, RP-13), Roanoke River (RO-3), and Shenandoah River (SH-4) basins. The Tennessee River Basin remains a high priority for identifying appropriate wetland mitigation projects and will be given additional focus in 2009.
- **Tidal Salt Marsh Restoration:** The amount of tidal wetland impacts and associated mitigation payments is more limited than those for non-tidal wetlands, and historically the Conservancy has focused on the areas of greatest mitigation need. Nevertheless, a number of projects with tidal mitigation components have been approved through the Fund, including four that involve innovative restoration efforts such as submerged aquatic vegetation restoration (AO-1, AO-3) and oyster reef restoration (AO-2, LJ-3). However, tidal salt marsh restoration or creation is lacking across all basins in which mitigation payments have been received. Although the restoration efforts funded to date are not inferior, they result in mitigation that is “out-of-kind.” Therefore, tidal salt marsh restoration and/or creation will be a priority, especially for the Atlantic Ocean, Chesapeake Bay, and Lower James River basins which have accumulated the greatest amount of tidal salt marsh impacts.

- **Stream Mitigation Priorities:** The majority of stream impacts utilizing the Fund for mitigation have occurred in the Potomac River Basin. Additional basins with high impacts include the Middle James River, Lower James River, Shenandoah River, and Rappahannock River basins. These five basins account for 88% of the linear footage of impacts through 2008. Appropriately, the Conservancy has focused on these basins to identify and propose stream mitigation projects. The priority for stream mitigation in 2009 will be to find appropriate sites in basins with fewer, but older impacts, such as the New River basin.
- **Implementation of Approved Projects:** As reported in Section III, \$11,255,448 was authorized towards the mitigation activities associated with 33 projects approved in 2008. The number of projects proposed and approved annually continues to increase. The approved projects include non-tidal wetland, tidal wetland, and stream mitigation projects involving a suite of activities including restoration, enhancement, and preservation at sites across the state. In 2008, eleven of the approved projects involved restoration and/or enhancement that include design, permitting, site construction, contract oversight and supervision activities that preservation projects typically do not require. Due to the significant number of projects approved in 2007 and 2008 (in addition to the projects previously approved), the Conservancy staff must dedicate significant effort over the next annual cycle to implement these approved projects.
- **Mitigation Monitoring and Maintenance of Existing Sites:** As approved projects are implemented, mitigation monitoring and corrective action on sites becomes major priorities for the Fund to ensure the success of the sites. Mitigation monitoring and reporting require a large investment in resources over a long timeframe. For instance, approximately fifty percent of the non-tidal wetland restoration (455.9 acres) and upland restoration (202.9 acres) projects require scheduled monitoring through 2011, with the others requiring monitoring through 2016. Similarly, as more stream projects with restoration and enhancement are approved and implemented, the mitigation monitoring obligations will continue to increase. In addition, corrective action on some sites is an anticipated and necessary part of mitigation projects. Of the thirteen constructed non-tidal wetland projects, some form of corrective action is needed on approximately half of the projects. This corrective action could be in the form of invasive species control, supplemental planting to correct low survival of planted vegetation, the maintenance or replacement of engineering structures/practices to increase site hydrology, etc. Managing this workload in a way that ensures the success of the mitigation sites will remain a high priority.
- **Closure of Completed Projects:** In 2008, the Conservancy successfully closed eight projects, bringing the total number of closed projects to twenty-five. Project closure enables the Fund to finalize the mitigation value of projects, and return any authorized funds not spent for the project at the time of closure to the Fund to facilitate additional mitigation projects. Officially closing completed projects will help guide the Conservancy in prioritizing the basins with high mitigation need, while allowing the program to analyze the available remaining balance for each basin.

Approximately one-third of the approved projects have been identified in this report as “pending project closure” meaning that the projects are ready to be officially closed. Many of the projects pending closure require a delineation of surface waters and wetlands, must have a wetland assessment completed to verify wetland acres, or are

awaiting Corps confirmation. The remaining projects have completed all of the requirements for project closure. Officially closing these projects will be a priority in 2009. These project closure and delineation efforts represent a large amount of coordination and field time, respectively.

Attachment A. Approved Project Table.

Included as a stand-alone document – filename: *2008 Report - Attachment A..pdf*.

Attachment B. Map of Project Locations within River Basins

Included as a stand-alone document – filename: *2008 Report - Attachment B - [11x17].jpg*

Attachment C. Project Summaries within River Basins

Included as a stand-alone document – filename: *2008 Report – Attachment C..pdf*

Attachment D. Map of Northwest River Conservation Corridor

Included as a stand-alone document – filename: *2008 Report - Attachment D - [8.5x11].jpg*.

Attachment E. Map of Dragon Run Conservation Corridor

Included as a stand-alone document – filename: *2008 Report - Attachment E - [8.5x11].jpg*.